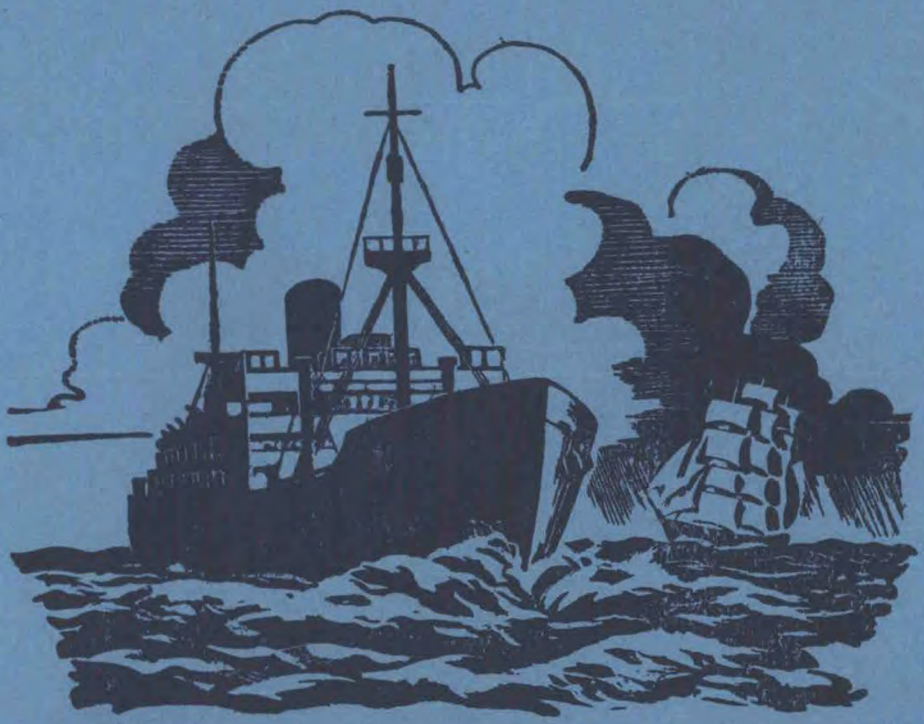
M.O. 638

# The Marine Observer

*A quarterly journal of Maritime Meteorology*



Volume XXVIII No. 181

July 1958

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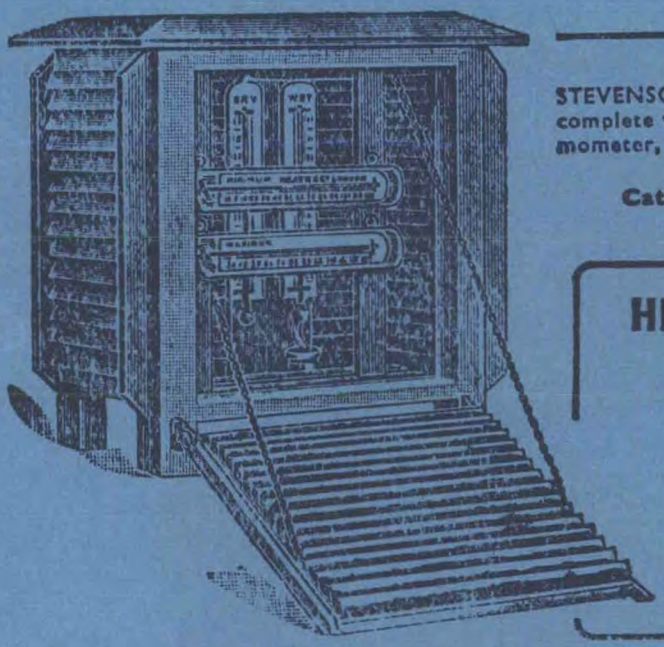

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M.O. 638 AIR MINISTRY

# THE MARINE OBSERVER

A QUARTERLY JOURNAL OF MARITIME METEOROLOGY PREPARED BY THE MARINE DIVISION OF THE METEOROLOGICAL OFFICE

VOL. XXVIII No. 181 JULY, 1958

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*Letters to the Editor, and books for review, should be sent to the Editor, "The Marine Observer," Meteorological Office, Headstone Drive, Harrow, Middlesex*

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# Editorial

On 20th February, 1958, the Minister of Transport and Civil Aviation presented to representatives of the Merchant Navy and Fishing Fleets a roll of honour recording the names of more than 33,000 merchant seamen and fishermen who lost their lives at sea during the World War of 1939–45. The foreword of this roll of honour mentions that there were never more than 200,000 officers and ratings serving in these ships, and thus in no other field of war did so high a proportion of those engaged lose their lives. It is appropriate that this roll of honour should be mentioned in *The Marine Observer*, because of the high proportion of Merchant Navy officers and ratings who have at some time or other served in voluntary observing ships, and were thus numbered among those who died. Also a number of the ships which were themselves lost in the war had at some time or other been thus associated with the Meteorological Office.

* * *

So many merchant ships are now fitted with radar, and one hears so much about " radar assisted " collisions that the Institute of Navigation did a useful public service in the summer of 1957 when it acted as host for an international conference on the "Avoidance of Collision by Shipborne and Airborne Means ". The October 1957 number of the journal of that Institute gives a full account of the various papers which were read and of the most important aspects of the discussion. Its contents are of such interest and value that all officers serving in ships fitted with radar would derive benefit from reading it.

The conference was organised jointly by that Institute, the French Institute of Navigation and the German Ausschuss fur Funkortung. The papers discussed were almost entirely devoted to radar problems and their titles indicate the scope of the conference: " Mathematics of Collision Avoidance at Sea "; " Collision at Sea despite Radar "; " Radar Manoeuvring and the Collision Regulations "; " Electronic Solutions to the Collision Problem at Sea ". Perhaps the best way of summarising the results of the conference is to quote from the formal conclusions which were drawn up by a small working party at the end of the conference.

> Discussion by the conference of a number of collisions involving radar-fitted ships led to the general conclusion that in these cases the human element was the prime cause of accident. The shortcomings have been caused on the one hand by the failure of masters and other officers of radar-fitted ships to appreciate the limitations of their radar equipment and to utilise all its possibilities; and on the other by a lack of appreciation of the risks of closing other vessels at speed and altering course at close quarters. Maritime nations should, it is suggested, for this reason make every effort to promote proper training in the use of radar for collision avoidance.
>
> A second cause of the accidents discussed seems to have been either contravention or too free an interpretation of the rule of the road, particularly where moderate speed is concerned. The conference considered whether it was possible to recommend more precise definition in some of the rules in order to underline the responsibilities of radar-equipped ships and to emphasise the precautions that should be taken in fog.
>
> It was generally agreed that greater attention to the following matters should lead to a reduction in the number of collisions:
>
> (i) The Steering and Sailing Rules (Part C of the Rule of the Road), except Rule 25, apply only to vessels which are in sight of one another.
> (ii) Continuous observation and appreciation of the screen (Rule 29).
> (iii) The interpretation of " moderate speed ".
> (iv) Maintaining course after hearing a fog signal before the beam.
> (v) Stopping and navigating with caution at close quarters even when a fog signal is not heard.

There is little doubt that the majority of our voluntary observing ships are fitted with radar nowadays, and it seems pertinent to remind ourselves that the need for radar as a navigational aid would never arise if it were not for the existence of meteorological phenomena such as low visibility. Other meteorological pheno-

mena have such a marked effect upon radar performance—be it super-refraction, sub-refraction or attenuation—that meteorology and radar seem to be inextricably related. As stated elsewhere in this number, our voluntary observers aboard British ships have provided very useful statistics for the Admiralty about radar performance at sea, and various interesting narrative reports on the subject appear from time to time in the " Marine Observers' Log ". It thus never seems inappropriate to discuss the general subject of radar in this magazine, the majority of whose readers are officers serving in merchant ships.

* * *

The year 1957 marked the centenary of the death of a man whose name must be familiar to every British seaman—Admiral Sir Francis Beaufort. He is chiefly familiar to officers in merchant ships by virtue of the Beaufort scale of wind force and of the Beaufort letters, both of which were compiled by him in 1808 and are still in general use. The Beaufort wind scale has been brought up to date and modified somewhat in order to suit modern requirements, but it is still basically the same as conceived by Beaufort. It is used for international meteorological observing purposes not only at sea but also ashore on occasions when an anemometer cannot be used. In synoptic reports, however, wind speed is now reported in knots. Admiral Beaufort was not only a very keen amateur meteorologist but, as a member of the Naval Survey Service, he showed an early interest in various scientific subjects and was also a very proficient seaman. Evidence of his work as a marine surveyor is shown on many Admiralty charts. He was Hydrographer of the Navy from 1829 to 1855 and was also a Fellow of the Royal Society. A centenary lecture about his life and work was given at the Institute of Navigation in December 1957 by Rear-Admiral Collins, the present Hydrographer of the Navy.

MARINE SUPERINTENDENT.

## WORK OF THE MARINE DIVISION, METEOROLOGICAL OFFICE, AND THE VOLUNTARY OBSERVING FLEET DURING THE YEAR ENDING 31st MARCH, 1958

### 1. Voluntary Observing Ships

British voluntary observing merchant ships have been recruited for this work during the year by our Port Meteorological Officers at London, Liverpool, Southampton, Glasgow and Cardiff, and by Merchant Navy Agents at Newcastle, Hull and Leith. It is also their duty to instruct ships' officers on making meteorological observations, supply and inspect meteorological instruments, and issue logbooks and stationery as necessary and answer any queries which arise. Officers aboard ship change so frequently under modern conditions that it is more than ever necessary for these personal contacts to be maintained and every endeavour is made to visit every voluntary observing ship at least once a quarter. These personal visits also do much to maintain the pleasant relationship that has so long existed between the voluntary observing ships and the Meteorological Office. During the year the Port Meteorological Officers and Merchant Navy Agents made a total of 3,441 visits to the observing ships.

The British Voluntary Observing Fleet, as shown in Table 1 on page 112, has averaged about 700 ships during the year (the world total of voluntary observing ships being approximately 2,800) and is comprised as follows:

(*a*) *Selected ships*, which are supplied on loan with a full set of meteorological instruments and make very complete observations (Code Form F.M.21A) and transmit them by radio to selected radio stations ashore, in accordance with arrangements made by the World Meteorological Organisation (W.M.O.) and the International Convention for the Safety of Life at Sea. Ships of other nations similarly co-operate in this scheme and send observations to the meteorological service appropriate to the region in which the ship is situated.

| | April | May | June | July | 1957 Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | 1958 Feb. | March |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Table 1. Number of British Observing Ships** | | | | | | | | | | | | |
| No. of Selected Ships on Fleet List | 504 | 497 | 496 | 494 | 493 | 491 | 492 | 496 | 493 | 490 | 485 | 487 |
| No. of Supplementary Ships on Fleet List | 53 | 55 | 54 | 58 | 59 | 59 | 57 | 57 | 54 | 57 | 57 | 57 |
| No. of Marid Ships on Fleet List | 100 | 100 | 100 | 98 | 98 | 98 | 98 | 98 | 97 | 98 | 97 | 97 |
| No. of Light-vessels on Fleet List | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| No. of Trawlers on Fleet List | 36 | 36 | 33 | 31 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| No. of Non-Instrumental Ships on Fleet List | 5 | 5 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Table 2. Ships' Radio Weather Messages received at Dunstable** | | | | | | | | | | | | |
| 1. *British Selected Ships* | | | | | | | | | | | | |
| No. reporting to Dunstable | 316 | 361 | 302 | 315 | 312 | 313 | 344 | 329 | 311 | 302 | 300 | 323 |
| No. of messages received | 3,347 | 3,300 | 2,998 | 2,851 | 3,044 | 3,114 | 3,563 | 3,541 | 3,183 | 3,164 | 2,899 | 3,322 |
| No. of groups (excluding address and ship's name) | 27,925 | 27,205 | 24,448 | 23,297 | 23,986 | 24,884 | 28,364 | 28,663 | 25,664 | 29,337 | 23,405 | 26,253 |
| Daily average of messages | 112 | 104 | 100 | 92 | 98 | 104 | 115 | 118 | 103 | 102 | 104 | 107 |
| 2. *British Marid Ships* | | | | | | | | | | | | |
| No. reporting to Dunstable | 60 | 69 | 72 | 67 | 67 | 68 | 61 | 52 | 55 | 51 | 55 | 58 |
| No. of messages received | 434 | 521 | 569 | 593 | 623 | 508 | 420 | 388 | 344 | 343 | 345 | 432 |
| Daily average of messages | 15 | 17 | 19 | 19 | 20 | 17 | 13 | 13 | 11 | 11 | 12 | 14 |
| 3. *Foreign Ships* | | | | | | | | | | | | |
| No. reporting to Dunstable | 124 | 158 | 110 | 116 | 135 | 154 | 171 | 120 | 133 | 130 | 128 | 187 |
| No. of messages received | 446 | 546 | 424 | 525 | 541 | 492 | 591 | 638 | 534 | 430 | 492 | 638 |
| No. of groups (excluding address and ship's name) | 3,886 | 4,791 | 3,682 | 4,616 | 4,725 | 4,301 | 5,161 | 5,537 | 4,660 | 3,784 | 5,853 | 5,597 |
| Daily average of messages | 15 | 18 | 14 | 17 | 18 | 16 | 19 | 21 | 17 | 14 | 18 | 21 |
| 4. *Light-vessels* | | | | | | | | | | | | |
| No. reporting to Dunstable | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| No. of messages received | 1,023 | 1,033 | 1,004 | 1,030 | 1,043 | 988 | 1,092 | 1,074 | 1,082 | 1,119 | 1,006 | 1,128 |
| Daily average of messages | 34 | 33 | 34 | 33 | 34 | 33 | 35 | 36 | 35 | 37 | 36 | 36 |
| **Table 3. Instrumental Equipment on Loan to British Voluntary Observing Ships** | | | | | | | | | | | | |
| 1. *Selected* | | | | | | | | | | | | |
| (*a*) Full set of M.O. instruments | 500 | 493 | 492 | 490 | 489 | *487 | 488 | 492 | 489 | 486 | 481 | 483 |
| (*b*) Full set of M.O. instruments except barograph | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| (*c*) Full set of M.O. instruments except barometer | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| (*d*) Full set of M.O. instruments, with aneroid instead of mercurial barometer | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 2. *Marid.* Set of instruments | 100 | 100 | 100 | 98 | 98 | 98 | 98 | 98 | 97 | 98 | 98 | 97 |
| 3. *Light-vessel.* Set of instruments | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| 4. (*a*) Supplementary set | 51 | 53 | 52 | 56 | 57 | 57 | 55 | 55 | 52 | 55 | 55 | 55 |
| (*b*) Supplementary set, with aneroid instead of mercurial barometer | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

(*b*) *Supplementary ships*, which make somewhat less detailed meteorological observations than those made by selected ships and are supplied on loan with only a barometer, an air thermometer and screen. They use an abbreviated code (F.M.22A) when transmitting their observations by radio.

Selected and supplementary ships also keep records of whales sighted, for the National Institute of Oceanography, and make notes concerning types of aurorae which they observe, for the Department of Philosophy at Edinburgh University. All these ships also make observations of various phenomena which they observe during the course of their voyages.

(*c*) *Coasting vessels*. These ships make observations of the surface sea temperature when in the waters surrounding the British Isles and transmit them in a brief code to British coast stations (either by radio telegraphy or radio telephony). When in the North Sea these ships include in their reports observations of wind, weather and visibility, in order to meet the needs of the meteorologists in all countries bordering the North Sea. These ships are also given the codeword "Marid" (see pages 112 and 118).

(*d*) *Light-vessels*. By courtesy of Trinity House, 13 light-vessels make observations of wind, waves, visibility and air and sea temperature; 11 of these send their reports by R/T to G.P.O. coast stations. (Reports from *Dowsing*, *Galloper* and *Royal Sovereign* light-vessels are included in the "five-minute" B.B.C. weather bulletins for shipping.)

(*e*) *Trawlers*, which make simple visual observations (no instruments being needed) and transmit them in Code Form F.M.23A, which they send by W/T or R/T as convenient to radio stations in the United Kingdom, Canada, Iceland or Norway, depending on the area in which they are fishing. These vessels may be operating in the Davis Strait, Icelandic waters or in the Barents Sea, all of which are areas in which shipping is very sparse, and their observations are therefore of very great value.

(*f*) *Auxiliary ships*. Special arrangements have been made through the auspices of the W.M.O. to recruit "auxiliary ships" during the period of the International Geophysical Year, to make "non-instrumental" observations in areas where shipping is normally sparse. The object of this scheme is to make a special effort to ensure that all merchant ships trading in unfrequented waters, even if they are not selected or supplementary ships, do at least send brief radio weather messages whenever they can.

G.P.O. coast stations and the Central Telegraph Office, London, are connected by teleprinter with the Meteorological Communications Centre at Dunstable, and this ensures rapid receipt of messages by the meteorologists for plotting on the synoptic charts and subsequently for the issue of weather bulletins. A written record of all these reports eventually arrives in the Marine Division of the Meteorological Office, either in the form of logbooks which have been prepared aboard the ship, or (in the case of trawlers and coasting vessels from which no written records are required) in the form of printed teleprinter messages which are forwarded from Dunstable. All these observations are eventually punched on to Hollerith cards, for processing by machine methods, and are thus readily made available for climatological work or for answering enquiries.

All the logbooks received from selected and supplementary ships are carefully scrutinised and classified by a nautical officer in the Marine Division and are awarded marks for their quality. They are also carefully checked for error by meteorologists before the data is extracted from them. The evidence is that the general quality of the meteorological work done by our voluntary observers is of a high standard; the observations are generally made in a careful and accurate manner and the radio weather messages are regularly transmitted to the appropriate authorities. The "Marine Observers' Log" illustrates the variety of the astronomical, oceanographical, ornithological and meteorological phenomena which are observed aboard our ships. The scheme which was introduced during the year

whereby the " fair log " can be discontinued and the " rough log " sent in instead, at the discretion of the master, has proved very successful. Observations in the rough logs have generally been remarkably neat. An average of 109 logbooks has been received monthly.

Each selected ship is supplied on loan with a mercurial barometer, barograph, portable screen with thermometers and a special sea-water bucket (see Table 3, page 112).

Table 4, below, shows the trades in which British selected ships were engaged during the year.

**Table 4. Numbers of British selected ships on main routes from and to the United Kingdom**

| | |
|---|---|
| Australasia | 102 |
| Far East | 42 |
| Persian Gulf | 12 |
| South Africa | 22 |
| North Atlantic | 79 |
| West Indies | 20 |
| Atlantic coast of South America | 31 |
| Pacific coast of South America | 8 |
| Pacific coast of North America | 5 |
| Europe, mainly northern Europe | 9 |
| Falkland Islands and Antarctic | 12 |
| World-wide " tramping " | 103 |

Table 2 (page 112) summarises the radio weather messages received at Dunstable during the year from voluntary observing ships; all British voluntary observing ships in the eastern Atlantic and North Sea send their reports to Dunstable through G.P.O. coast stations. Statistics show that during the year an average of 52 per cent of the reports were received within one hour of the observation time and 75 per cent within two hours. The logbooks show that in all other areas of the oceans the reports are also transmitted regularly in accordance with the international scheme.

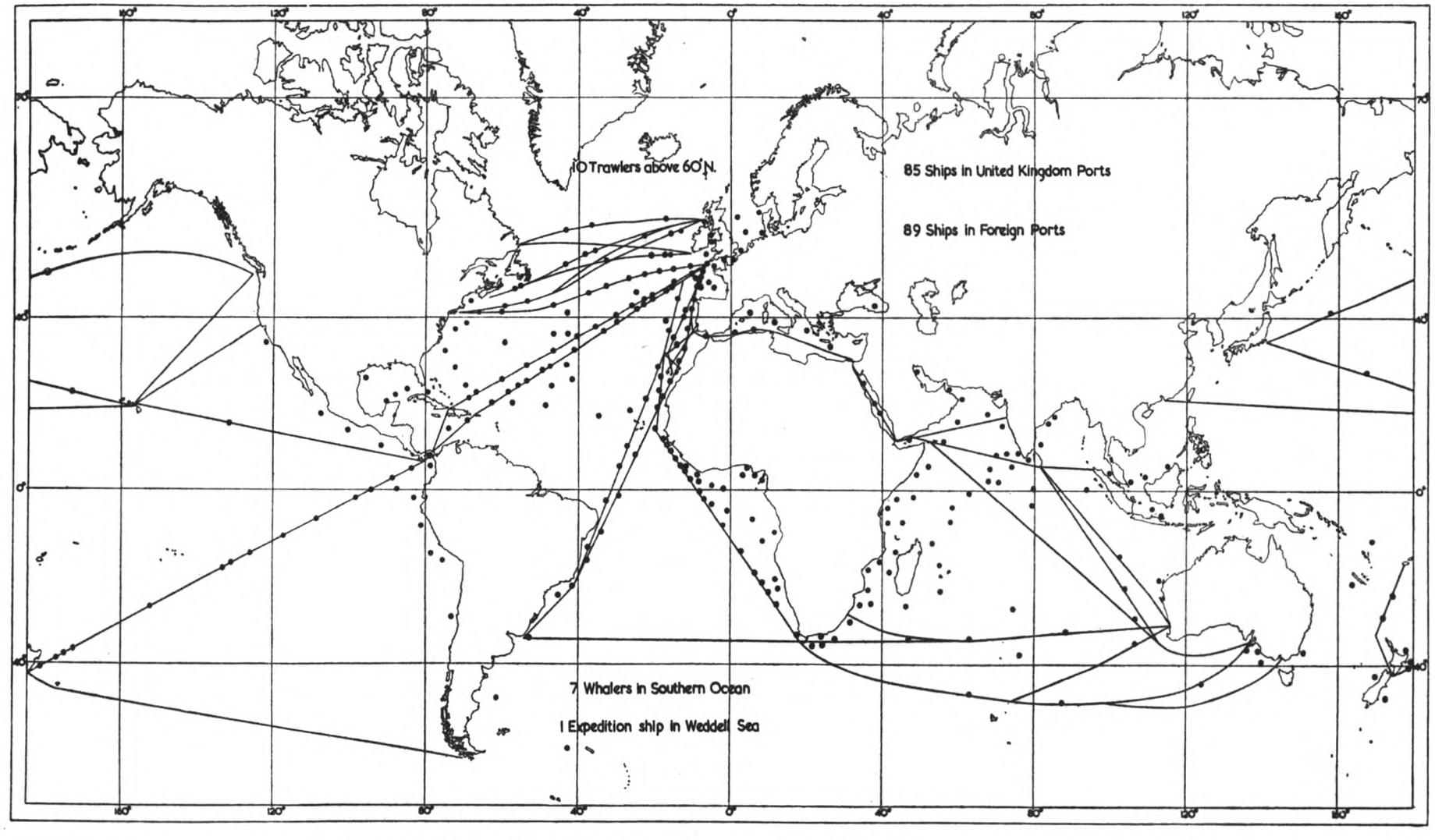
As a result of special efforts made by our Port Meteorological Officers and Merchant Navy Agents, there has been a gratifying increase in the number of reports received from ships in the North Sea. This is an area which is of considerable meteorological importance, not only to the United Kingdom but also to northern European countries and, as elsewhere, the more reports which are received the more accurate the forecasts for shipping will be in that area. During the year an average of 417 reports a month have been received at Dunstable from British ships in this area compared with 275 per month in 1956.

Reports received by radio from trawlers fishing in far northern waters have also shown an appreciable increase; an average of 242 per month, compared with 152 per month for 1956. This does not include reports which British trawlers send to radio stations other than in the United Kingdom. It is true to say that unless radio weather messages are received from trawlers, it is almost impossible for any meteorological service to issue accurate weather bulletins for vessels operating in those waters.

As in former years, the map on page 115 shows the world-wide distribution of British selected ships on a day picked at random.

## 2. Ocean Weather Ships

The four British ocean weather ships have now completed 10 years' service, and in view of the strenuous conditions under which they have had to operate, and the very considerable amount of sea time they have necessarily had to put in, the ships and their ship's companies have stood up to the work extremely well. The ships themselves, being former " Flower " class corvettes, were designed for rough work and they have certainly lived up to their reputation for seaworthiness. The following


10 Trawlers above 60°N.
85 Ships in United Kingdom Ports
89 Ships in Foreign Ports
7 Whalers in Southern Ocean
1 Expedition ship in Weddell Sea

The positions of British ships which made observations on 14th February, 1958.

are the names of the individuals who have served aboard the British weather ships throughout this 10-year period:

Captains Ford, Elston and Sobey; Radio Overseers Oliver and Chadwick; Chief Stewards Gascoyne and Read; Chief Radio Technicians Dunning and Brass, and Bos'n Clifton.

The ships themselves are now showing their age and the first of them (*Weather Explorer*) has been replaced by the " Castle " class frigate *Oakham Castle*, which was specially converted for the job, and renamed *Weather Reporter**.

During the year, the British Weather ships continued their normal programme of surface and upper-air observations, operating at stations A, I, J and K in rotation with French and Netherland vessels.

Recording electrical anemographs were installed in two of the weather ships, and the records are being studied. Aircraft of Coastal Command carried out air/sea rescue exercises in association with the weather ships, both by day and by night, wherever practicable. During these exercises mails, newspapers and urgently needed spare parts were dropped to the ships in watertight containers (see page 151). Tests of various types of inflatable life-rafts have been made on behalf of the Ministry of Transport and Civil Aviation.

**3. Additional work in connection with the International Geophysical Year**

Observations from our voluntary observing ships are playing a useful part in the International Geophysical Year programme. Arrangements have been made, in this connection, to ensure that ships' written meteorological records are available for international use. As mentioned previously, a number of extra ships have been recruited for the I.G.Y., to make non-instrumental observations in areas from which we have little climatological information at present. The study of aurora is an important feature of the I.G.Y. programme, and selected ships have provided a large number of aurora reports, from all oceans (see article on page 147). During the I.G.Y. our weather ships are using large balloons to obtain radar wind and radio-sonde observations up to a height of about 100,000 feet. They are also using radiation instruments to obtain continuous records of the net flux of radiation through a horizontal surface as well as those of total solar radiation on a horizontal surface. The records are being analysed and tabulated in the Marine Division.

**4. Marine Climatology**

The average number of logbooks received from selected and supplementary ships was 109 per month. Logbooks and upper-air data have been received regularly from ocean weather ships operating on stations A, I and J. Microfilm copies of observations made at other ocean stations have been received.

Observations from all logbooks, including those received from naval ships, have been punched on to Hollerith cards. The total number of observations punched during the year was 185,837, which included some from logbooks received from Norwegian, Netherlands and French ships.

Information, including statistical tables and charts of marine data, were supplied on request to the Naval Weather Service, other Government departments, scientific institutions, commercial firms and private individuals. The following examples will give our voluntary marine observers some idea of the value of their observations to the various enquirers:

(*a*) Wave data required in connection with proposed constructional work in the Persian Gulf, the Gulf of Paria, Maldive Islands and Tripoli were supplied to firms of civil engineers and to Shell Tankers, Ltd.

(*b*) Tables of fog frequency in the Channel and North Sea coastal waters were prepared for the Radio Advisory Service for research purposes.

(*c*) Summaries showing the mean annual frequency of gales in specified areas of the Atlantic, Caribbean and the Arabian Sea were prepared for the Ministry of Transport and Civil Aviation.

* *Weather Reporter* sailed on her first voyage as an ocean weather ship on 22nd May, 1958.

(*d*) A large number of observations made at sea in vessels selected by the British Shipbuilding Research Association were examined, to obtain stress data for ships.

**5. Currents and Ice**

The new current atlas, *Quarterly Surface Current Charts of the eastern North Pacific Ocean*, is nearly ready for the printer. Work has continued on the computation of currents for the eastern South Pacific Ocean.

A summary map showing ice conditions on the Grand Banks of Newfoundland during the last 10 years is being prepared.

**6. Admiralty Pilots and Charts**

The work of revision of the information relating to surface currents and ice in Admiralty Pilots goes on continuously and seven volumes were dealt with during the year, five of which required ice as well as current revision. The revision of the meteorological sections of the seven Pilots was co-ordinated with the Climatological Research Branch, and meteorological charts for publication with the texts were prepared in the Marine Division.

Information relating to surface currents was forwarded to the Admiralty to be inserted on 29 new or revised Admiralty navigational charts covering widely separated parts of the oceans.

**7. Special Work**

(*a*) Meteorological and ocean current statistics for ocean weather stations I (59°N., 19°W.), J (52½°N., 20°W.) and A (62°N., 33°W.) for 1956 were completed and summaries prepared.

(*b*) An investigation into the incidence of temperature inversions below about 8,000 feet at ocean weather stations I and J, in relation to the synoptic situation, was completed and a draft paper prepared.

(*c*) A paper was written discussing measurements of air temperature, humidity and sea temperature profiles near sea level obtained at ocean weather station I during 1956, and describing the equipment used, which consisted of thermocouples mounted on a danbuoy.

(*d*) Further progress was made with investigations concerning the energy balance and also the diurnal variation of various meteorological elements at ocean weather stations I and J.

(*e*) An investigation into the secular variation of air and sea temperatures over the tropical Atlantic Ocean is being written up.

(*f*) Trials of a new type of sea-water sampler have been completed aboard merchant ships. Trials of aneroid barometers, with a view to their official use at sea, have been carried out aboard the weather ships. There have also been experiments aimed at obtaining more accurate psychrometer readings at sea, and in obtaining rainfall observations using a specially designed raingauge, hoisted aloft at the mainmast.

(*g*) Papers were prepared by the Marine Superintendent on " Improvement of data coverage in the Pacific Ocean ", for the Ninth Pacific Science Congress, and upon " Meteorology at Sea ", for publication in the Bulletin of the International Oceanographical Foundation, Florida, U.S.A.

(*h*) Work has been done on an investigation into variations of air temperature, sea temperature and dewpoint along selected shipping routes.

**8. Publications**

(*a*) *The Marine Observer* was published quarterly.

(*b*) The remaining charts in the series *Climatological and Sea-Surface Current Charts of the North Atlantic Ocean* were forwarded to the printer, and most of these were published during the year.

(*c*) Work was started on the preparation of *Climatological and Sea-Surface*

*Current Charts of the South Atlantic Ocean*, similar to the North Atlantic charts mentioned above. Most of the drawing work was completed.

(*d*) A fourth edition of M.O. 509, *International Meteorological Code, Decode for Use of Shipping*, was published.

**9. International Co-operation**

At the request of the Ministry of Agriculture and Fisheries, arrangements were concluded with the U.S.S.R. authorities during the year for them to issue forecasts in English for British trawlers operating in the vicinity of the White Sea, and likewise with the Canadian authorities for the Davis Strait area.

**10. Awards**

The meteorological logbooks received from selected and supplementary ships, Marid ships and trawlers, were carefully assessed by a nautical officer. Prizes are being presented to the masters, principal observing officers and radio officers of the ships whose logbooks came in the first 100 in order of merit. The books to be awarded as prizes this year are Bartholomew's *Advanced Atlas of Modern Geography*, *Mathematics for the Million*, by L. Hogben, and *The Sea Shore*, by C. M. Yonge. In addition, books will be awarded to two trawlers and two Marid ships, the basis of the award being the number of observations received from the ship by radio.

The Director of Services, Dr. J. M. Stagg, presented barographs last December to four masters of British voluntary observing ships for consistently good meteorological work over a long period (see April 1958 number of this journal).

## EXCELLENT AWARDS, 1957-58

Thirty-four years ago, in 1924, the July number of *The Marine Observer* contained the first list of Excellent Awards, though awards had been given almost since the birth of the Meteorological Office. That list has since been one of the permanent features of the July number and for the year ending 31st March, 1958, appears on pages 120-122 of this issue.

Once again it is our pleasure to congratulate the captains, deck and radio officers whose names appear in the list. They will be individually notified of the award by letter and asked for an address to which they would like us to send it. If, however, any captain or officer sees his name in the list before he receives the official letter, we would be very glad if he would write to us claiming the award and giving us his home address, or any other address to which he would like the award sent, for we realise that letters have a habit of following officers from port to port, sometimes not catching up with them for months, and by claiming the award direct from the pages of *The Marine Observer* much time and many repeated letters may be saved.

The assessing of ships' meteorological logbooks and the placing of them in an order of merit is a task to which considerable thought and care are devoted. The voluntary observing fleet comprises many types of ships, from the two-mate ship carrying only R/T worked by a deck officer, to the lordly passenger liner carrying seven or more deck officers and keeping a 24-hour radio watch. The trades engaged in vary, from the short sea and North Atlantic run with their permanent hazards of speed, discomfort and variable visibility, to the Mediterranean and Indian runs with numerous ports of call in a short time, and to the comparative peace of the long run to Australia or New Zealand. Comparison between meteorological logbooks of such a diverse number of ships with such variable opportunities of observing is not easy, but the assessing is always done by seamen, the Nautical Officre at Harrow supported by the Port Meteorological Officers. The yardstick for the Excellent Awards is the amount of effort and willingness to help which has gone into the compiling of the logbooks.

In the year ended 31st March, 1958, the best books were received from the following 12 ships:

1. *Prospector* (T. & J. Harrison, Ltd.), Captain W. Lawton.
   *Sheldrake* (General Steam Navigation Co., Ltd.), Captain P. Griffiths.
2. *Trevelyan* (Hain S.S. Co., Ltd.), Captain H. Gravell.
3. *Laurentia* (Donaldson Bros. & Black, Ltd.), Captain T. S. Graham.
   *Trevince* (Hain S.S. Co., Ltd.), Captain J. Williams.
   *Warkworth* (R. S. Dalgliesh, Ltd.), Captain N. Thompson, M.B.E.
4. *Marna* (Chr. Salvesen & Co.), Captain J. A. McConachie.
   *New York City* (Bristol City Line, Ltd.), Captain A. L. Webb, O.B.E.
   *Nova Scotia* (Johnston Warren Lines, Ltd.), Captain J. E. Wilson, O.B.E.
   *Cambridge* (Federal Steam Navigation Co., Ltd.), Captain P. P. O. Harrison.
   *Explorer* (Scottish Home Department, research ship), Captain E. A. Bruce.
   *Rangitata* (New Zealand Shipping Co., Ltd.), Captain E. H. Hopkins.

In this, the fourth annual " short list ", we congratulate *Warkworth* and *Marna* on appearing for the third time, whilst *Prospector*, *Trevelyan* and *Laurentia* are making their second appearance. The customary photographs of the best three ships of the year appear opposite page 124 and special mention must be made of *Trevelyan* who is having her photograph thus published for the second consecutive year.

It is sad to note that Captain A. L. Webb, O.B.E., who is named in the above list, died shortly after we received the logbook which gained the award. His obituary notice appeared in the April number of *The Marine Observer* and the Excellent Award has been sent to his widow.

Forty-five shipping companies are represented in the year's awards and this is a good measure of the uniform quality of the voluntary observing of all officers in all types of ships and in all trades.

During the year 1,310 meteorological logbooks were received from selected and supplementary ships, of which 397, or 30·28 per cent, were assessed as " Excellent ". The gradual percentage increase in logbooks attaining the " Excellent " standard from 17·3 in 1954 through 23·3, 25·6 and 28·8 in successive years to the present figure is most heartening. It had been feared that the adoption of the single log-book earlier in the year, instead of the rough and fair copies, might lead to some lowering of the standard of the observations. That this fear has proved without foundation is a matter for satisfaction. Not all ships have taken kindly to the idea, however; in fact many letters have been received deprecating the change which was introduced largely on the suggestion of voluntary observers. A recent count of 350 logbooks showed 204 to be made out in fair and 146 in rough only. In the first few weeks of the new scheme we found that about one-third of the ships chose to adopt it whilst two-thirds preferred to continue making out fair copies. It has been noticed that some ships who at first returned a very firm " No " when they were asked if they would like to send us their original observations are now doing so and we feel that, like most new ideas at sea, this is one which may take a long time for its benefits to be felt.

Though 392 logbooks have attained the " Excellent " marking, the number of awards is fixed at 100 and there will thus be many captains and officers who, conscious of having sent in a book which they consider worthy of an award, will be disappointed at not finding their names in the list. Such officers may find consolation in the fact that there are others who, having suffered many such disappointments, will this year find their names there for the first time. No doubt these will be able to give a glance of encouragement astern to those who follow.

For the second year awards are also being given to Marid ships and trawlers. The comparative quality of the unspectacular but valuable voluntary work of these ships is hard to assess, but the awards are calculated on the basis of the greatest number of radio messages sent to the British Meteorological Office. L. B. P.

## EXCELLENT AWARDS (Year ending 31st March, 1958)

| Ship | Captain | Principal Observing Officer | Senior Radio Officer | Owners |
|---|---|---|---|---|
| *Adelaide Star* | D. R. Macfarlane | B. D. C. Franklin | W. Wade | Blue Star Line, Ltd. |
| *Ajax* | G. Carney | M. Nall | B. Mendham | A. Holt & Co. |
| *Albatross* | J. S. Lickis | J. A. Twistleton | A. Laurie | General Steam Navigation Co., Ltd. |
| *Apollo* | G. V. Barnes | H. G. Mowatt | W. Kay (deck officer) | Bristol Steam Navigation Co., Ltd. |
| *Arakaka* | J. A. Carter | R. A. Hammond | W. Hughes | Booker Line, Ltd. |
| *Australia Star* | J. A. Hoppé | W. G. Jones | L. Cooper | Blue Star Line, Ltd. |
| *Avonmoor* | A. Coaster | D. Nicholas | J. Hands | W. Runciman & Co., Ltd. |
| *Baron Murray* | W. Warden | R. S. Connell | R. Foster | H. Hogarth & Sons, Ltd. |
| *Beaverford* | L. H. Johnston, M.B.E. | M. D. Watts | W. F. Jamfrey | Canadian Pacific S.S., Ltd. |
| *Birmingham City* | J. N. Ramsay | C. F. Harfoot | A. B. Pilkington | Bristol City Line of Steamships, Ltd. |
| *Biscoe* | S. K. Williams | A. J. Gibbs | K. T. H. Jones | Hector Whaling, Ltd. |
| *Borodino* | A. T. Jardine | R. L. Cole | F. Smith | Ellerman's Wilson Line, Ltd. |
| *British Bugler* | R. S. Hughes | H. W. G. Milligan | F. Kirk | B.P. Tanker Co., Ltd. |
| *British Sailor* | H. G. Jeary | G. W. McCathie | C. A. McGill | B.P. Tanker Co., Ltd. |
| *Bravo* | J. A. Etches | M. G. Morrell | W. E. L. Gittings | Ellerman's Wilson Line, Ltd. |
| *Cairndhu* | J. W. Scott | A. I. McDonald | W. P. Greaves | Cairns, Noble & Co., Ltd. |
| *Cairngowan* | I. G. Foster | D. G. Andrew | E. Johnston | Cairns, Noble & Co., Ltd. |
| *Calchas* | F. N. Fisher | R. S. Montgomery | P. Glasby | A. Holt & Co. |
| *Cambridge* | P. P. O. Harrison | R. N. Jordan | W. G. Thomas | Federal Steam Navigation Co., Ltd. |
| *Cape Howe* | A. M. Fraser | J. S. Cameron | D. O'Moore | Lyle Shipping Co., Ltd. |
| *Chindwara* | B. A. Rogers, D.S.C., R.D., Cdr. R.N.R. (Retd.) | J. A. Stanton | J. Downey | British India Steam Navigation Co., Ltd. |
| *City of Delhi* | W. E. Caffyn | D. Steward | D. W. McKelvie | Ellerman Lines, Ltd. |
| *Clan Buchanan* | H. T. Booth | B. W. Hollman | J. Lamb | Clan Line Steamers, Ltd. |
| *Clan Chattan* | R. R. Baxter | R. W. Bathgate | E. Shillabeer | Clan Line Steamers, Ltd. |
| *Clan Davidson* | T. A. Watkinson | W. F. McCarthy | J. R. Cunningham | Clan Line Steamers, Ltd. |
| *Clan Macdonald* | E. W. Jenkin | M. C. Banbury | A. W. J. McLeod | Clan Line Steamers, Ltd. |
| *Clan Urquhart* | C. M. Powell, M.B.E. | B. Middleton | T. G. Jones | Clan Line Steamers, Ltd. |
| *Corinaldo* | R. McNie | H. McDiarmid | A. R. Cox | Donaldson Bros. & Black, Ltd. |
| *Daleby* | H. W. S. Finn | K. B. Singer | L. G. Brousmiche | Sir R. Ropner & Co., Ltd. |
| *Dartmoor* | F. Bradfield | E. D. Somes | M. McEvoy | W. Runciman & Co., Ltd. |
| *Delphic* | C. L. Carroll, D.S.C., R.D., Lt.-Cdr. R.N.R. (Retd.) | A. J. Worricker | E. Moran | Shaw Savill & Albion Co., Ltd. |
| *Devon* | S. R. Harding | R. J. Bayliss | D. Gerrard | Federal Steam Navigation Co., Ltd. |
| *Diomed* | D. Jones | P. J. Shorrock | D. M. Hughes | A. Holt & Co. |
| *Dominion Monarch* | K. D. G. Fisher, G.M. | A. R. Smith | F. Harford | Shaw Savill & Albion Co., Ltd. |
| *Dorset* | K. Barnett, R.D., Cdr. R.N.R. | I. Slater | T. Green | Federal Steam Navigation Co., Ltd. |

| | | | | |
|---|---|---|---|---|
| *Durango* .. .. | T. W. F. Bolland .. .. | J. A. Cox .. .. | F. Griffiths .. .. | Royal Mail Lines, Ltd. |
| *Essex* .. .. .. | S. W. Andrews .. .. .. | J. Rice .. .. | L. Sutton .. .. | Federal Steam Navigation Co., Ltd. |
| *Eumaeus* .. .. | H. C. Large .. .. .. | J. S. Henriksen .. | T. McDowell .. | A. Holt & Co. |
| *Explorer* (F.R.S.) .. | E. A. Bruce .. .. .. | F. C. Chisholm .. | D. Ross .. .. | Scottish Home Department |
| *Fremantle Star* .. | G. T. King .. .. .. | P. Dann .. .. | W. L. Brown .. .. | Blue Star Line, Ltd. |
| *Glenartney* .. .. | H. S. Wood .. .. .. | J. W. Cottier .. .. | B. I. Chamberlain .. | Glen Line, Ltd. |
| *Glenorchy* .. .. | R. A. Hanney .. .. .. | J. D. Williams .. | A. H. Hill .. .. | Glen Line, Ltd. |
| *Gloucester City* .. | F. R. Neil .. .. .. | A. F. Ashton .. .. | N. Brett .. .. | Bristol City Line of Steamships, Ltd. |
| *Gothic* .. .. | L. J. Hopkins .. .. .. | T. T. Salmon .. | B. McGovern .. | Shaw Savill & Albion Co., Ltd. |
| *Hertford* .. .. | H. C. R. Dell .. .. .. | W. E. Gale .. .. | M. W. Hartson .. | Federal Steam Navigation Co., Ltd. |
| *Himalaya* .. .. | R. G. Freeman .. .. .. | J. N. H. Davies .. | M. J. Murphy .. | P. & O. Steam Navigation Co. |
| *Hororata* .. .. | D. A. G. Dickens, Lieut. R.N.R. | J. Thorpe .. .. | D. James .. .. | New Zealand Shipping Co., Ltd. |
| *Inishowen Head* .. | H. N. Clarke .. .. .. | N. W. G. Walsh .. | A. E. Adams .. .. | G. Heyn & Sons, Ltd. |
| *Interpreter* .. .. | W. Wetherall .. .. .. | E. Williams .. .. | P. H. Smyth .. .. | T. & J. Harrison, Ltd. |
| *Ixion* .. .. .. | R. Paterson .. .. .. | J. R. Howel .. .. | W. Beebee .. .. | A. Holt & Co. |
| *Laurentia* .. .. | T. S. Graham .. .. .. | I. McLundie .. .. | D. Murray .. .. | Donaldson Bros. & Black, Ltd. |
| *Leicestershire* .. | H. B. Peate, D.S.C., R.D., Capt. R.N.R. .. .. .. .. | H. A. Bonsor .. .. | J. E. Unsworth .. | Bibby Bros. & Co. |
| *Lismoria* .. .. | J. L. McQueen .. .. .. | A. MacLean .. .. | J. Limpitlaw .. .. | Donaldson Bros. & Black, Ltd. |
| *Lloydcrest* .. .. | L. Barwell .. .. .. | J. Hughes .. .. | J. McRostie .. .. | Crest Shipping Co., Ltd. |
| *Marna* .. .. | J. A. McConnachie .. .. | J. Carnie .. .. | A. D. Harkness (deck officer) .. .. | Chr. Salvesen & Co. |
| *Naticina* .. .. | J. A. McGherrie .. .. .. | I. V. Bole .. .. | R. Ward .. .. | Shell Tankers, Ltd. |
| *New Australia* .. | J. W. Hart .. .. .. | P. F. Hogg .. .. | W. Miller .. .. | Shaw Savill & Albion Co., Ltd. |
| *Newfoundland* .. | C. H. Kenyon .. .. .. | K. Swinburne .. | J. Keegan .. .. | Johnston Warren Lines, Ltd. |
| *New York City* .. | A. L. Webb, O.B.E. .. .. | G. J. Harfoot .. | A. Brookes .. .. | Bristol City Line of Steamships, Ltd. |
| *Nordic* .. .. | F. S. Thornton, O.B.E. .. .. | B. H. Whife .. .. | R. Drake .. .. | Shaw Savill & Albion Co., Ltd. |
| *Nova Scotia* .. .. | J. E. Wilson, O.B.E. .. .. | E. W. Foxworthy .. | W. C. Brook .. .. | Johnston Warren Lines, Ltd. |
| *Parthia* .. .. | S. A. Jones, R.D., Cdr. R.N.R. (Retd.) .. .. .. .. | R. P. Wakefield .. | A. O'Sullivan .. | Cunard Steamship Co., Ltd. |
| *Perim* .. .. | A. G. Stansfield .. .. .. | J. Cochrane .. .. | T. Twomey .. .. | P. & O. Steam Navigation Co. |
| *Perthshire* .. .. | T. N. Soane .. .. .. | K. R. Hogg .. .. | J. Pattie .. .. | Turnbull, Martin & Co., Ltd. |
| *Planter* .. .. | W. E. Williams .. .. .. | J. Chatfield .. .. | T. Jones .. .. | T. & J. Harrison, Ltd. |
| *Port Brisbane* .. | F. W. Baily, M.B.E. .. .. | D. Dixon .. .. | J. Sherwood .. .. | Port Line, Ltd. |
| *Port Fairy* .. .. | G. K. Morris .. .. .. | J. D. Hitchmough .. | C. D. Howick .. | Port Line, Ltd. |
| *Port Hardy* .. .. | A. N. Williamson .. .. | F. G. Gurney .. | G. C. Talbot .. .. | Bibby Bros. & Co. |
| *Port Lincoln* .. .. | C. J. H. Gorley .. .. .. | J. H. Lloyd-Davies .. | G. Clarke .. .. | Port Line, Ltd. |
| *Port Pirie* .. .. | G. G. Langford .. .. .. | J. R. Bell .. .. | H. J. Roberts .. | Port Line, Ltd. |
| *Port Townsville* .. | L. J. Skailes .. .. .. | M. R. Mortimore .. | K. A. Makin .. .. | Port Line, Ltd. |
| *Pretoria Castle* .. | G. H. Mayhew .. .. .. | K. J. Barry .. .. | P. Williams .. .. | Union Castle Mail S.S. Co., Ltd. |
| *Prospector* .. .. | W. Lawton .. .. .. | H. Traynor .. .. | T. F. O'Shea .. .. | T. & J. Harrison, Ltd. |
| *Rakaia* .. .. | H. N. Lawson, R.D., Capt. R.N.R. | D. Hyde .. .. | P. Broome .. .. | New Zealand Shipping Co., Ltd. |

| Ship | Captain | Principal Observing Officer | Senior Radio Officer | Owners |
|---|---|---|---|---|
| *Rangitata* | E. H. Hopkins | A. Carver | F. W. Fowler | New Zealand Shipping Co., Ltd. |
| *Rangitoto* | P. S. Calcutt | D. Standing | G. A. Parker | New Zealand Shipping Co., Ltd. |
| *Regent Hawk* | G. H. Hobson | P. W. Cresswell | H. J. Doherty | Regent Petroleum Tankship Co., Ltd. |
| *Rialto* | H. Greenhill | A. Hodson | A. C. Gavin | Ellerman's Wilson Line, Ltd. |
| *Rookwood* | A. Dover | D. Duncanson | J. Kelleher | W. France, Fenwick & Co., Ltd. |
| *Runa* | J. Gilfillan | R. M. Gray | A. Corless | Glen & Co., Ltd. |
| *Sacramento* | H. Grunnill | T. Baker | C. V. Child | Ellerman's Wilson Line, Ltd. |
| *Saxon Star* | C. A. Holleyoak | J. Gathercole | W. Smyth | Booth S.S. Co., Ltd. |
| *Settler* | H. G. Skelly | R. L. Hammond | W. Paterson | T. & J. Harrison, Ltd. |
| *Sheldrake* | A. E. Guest | P. Griffiths | J. McD. Robinson | General Steam Navigation Co., Ltd. |
| *Southern Cross* | L. H. Edmeads | R. Fulford-Dobson | H. Matthews | Shaw Savill & Albion Co., Ltd. |
| *Tagelus* | J. M. Davidson | D. D. Walker | D. M. Tarbet | Shell Tankers, Ltd. |
| *Tantallon Castle* | B. James | T. C. M. Ball | I. Barber | Union Castle Mail S.S. Co., Ltd. |
| *Tekoa* | F. C. Taylor | R. G. Williams | R. Hardy | New Zealand Shipping Co., Ltd. |
| *Tongariro* | S. W. Lambrick | N. M. Parry | P. Stephenson | New Zealand Shipping Co., Ltd. |
| *Tregenna* | W. F. Denyer | R. Powell | T. Willis | Hain S.S. Co., Ltd. |
| *Trelevan* | D. A. Loud | P. H. Morgan | P. A. Brown | Hain S.S. Co., Ltd. |
| *Trelyon* | W. T. Evans | J. O. Spence | V. D. Duggan | Hain S.S. Co., Ltd. |
| *Trevelyan* | H. Gravell | J. L. Hazell | J. L. Vaughan | Hain S.S. Co., Ltd. |
| *Trevince* | J. Williams | W. R. Clipson | E. J. Knight | Hain S.S. Co., Ltd. |
| *Tribesman* | W. S. Eustance | J. A. Billington | J. D. McCartney | T. & J. Harrison, Ltd. |
| *Twickenham* | S. E. Hooper | A. El Pharaony | W. Dewhurst | Watts, Watts & Co., Ltd. |
| *Umtata* | R. Harber | J. H. Szablowski | J. Molloy | Bullard, King & Co., Ltd. |
| *Warkworth* | N. Thompson, M.B.E. | C. Harron | D. Holden | R. S. Dalgliesh, Ltd. |
| *Windsor* | F. W. Grist | J. Boyle | R. Filkins | Watts, Watts & Co., Ltd. |
| *Woolwich* | D. A. Forrester | M. Jones | A. Sloan | Watts, Watts & Co., Ltd. |

## Marid Ships

| | | | |
|---|---|---|---|
| *Hibernia* | E. A. Horspool | J. R. Rowlands | E. G. Kindelan | British Transport Commission |
| *Innisfallen* | T. McVeigh | P. J. Kiernan | D. J. Neville | British & Irish Steam Packet Co., Ltd. |

## Trawlers

| Ship | Skipper | Wireless Operator | Owners |
|---|---|---|---|
| *St. Apollo* | S. Sparkes | F. Scott | Firth Steam Trawling Co., Ltd. |
| *Sardinian* | C. Coultas | A. Osborne (Mate) | Sir Thomas Robinson & Son, Ltd. |

# THE MARINE OBSERVERS' LOG

## July, August, September

*The Marine Observers' Log* is a quarterly record of the most unusual and significant observations made by mariners.

The observations are derived from the logbooks of marine observers and from individual manuscripts. Photographs or sketches are particularly desirable.

Responsibility for each observation rests with the contributor.

### HURRICANE " CARRIE " *

#### North Atlantic Ocean

M.V. *San Veronico.* Captain K. E. Spencer. South Shields to Punta Cardon, in ballast. Observers, the Master and Mr. R. C. Page, 2nd Officer.

19th September, 1957, at 1000 G.M.T. received notice of Hurricane " Carrie " by radio.

At 1100 in position 33° 48′N., 42° 33′W., vessel stopped for engine repairs, the hurricane then being centred in 35° 00′N., 53° 00′W. and reported to be moving 090° at 16 kt. During the day, while the vessel was stopped, the weather was fine and clear with few clouds, although Ci, Cc and Cs were noted above the fine weather Cu. Between 1100 and 1800 the wind was predominantly W'ly, force 2, and a slight swell was coming from the W. At 1830 the wind backed quickly to SE., force 2.

The vessel got under way again at 1942 and resumed her passage to Cardon via Sombrero Island passage, course 236°. By 2000 the horizon appeared to be exceptionally clear and the sun looked white and very hard.

During the period that the vessel had been stopped the barometer fell from 1017·2 to 1016·5 mb and at 2300 it was 1015·2 with a S'ly wind, force 2, slight sea, moderate W'ly swell, cloudy and clear, although since sunset Sc had been developing fairly rapidly.

At 0038 a report was received from Washington giving the position of " Carrie " at 2200 as 33° 42′N., 51° 06′W., moving SE. or ESE. at 12 kt. At this time the ship was in D.R. position 33° 05′N., 43° 55′W. At 0115 on 20th September, course was altered to 308° to clear the centre.

By 0300 the sky was completely overcast with St and low scud, accompanied by occasional rain squalls, otherwise visibility was excellent. The barometer had fallen to 1012·6 and the wind was SE., force 4. Moderate sea and no appreciable swell. Between 0300 and 0700 the wind backed to SSE., force 6, and a slight SW'ly swell was present.

At 0600 when in D.R. position 33° 40′N., 44° 50′W., received a report from Washington giving " Carrie's " position as 33° 24′N., 50° 00′W., moving ESE. at 12 kt.

By 0700 the barometer was down to 1005. Precipitation commenced and visibility was down to 2 miles at times.

At 0900 barometer 1002·8, wind SE., force 7, rough following sea, heavy SE'ly swell. By 1100 conditions remained very much the same except that the barometer had fallen to 999·7 and the wind increased to SE., force 8. It was then estimated that, from the wind direction, " Carrie " must be to the SW. of us, and we hoped that it was still moving SE.

*A map of the track of Hurricane " Carrie " appeared on page 23 of the January 1958 number of this journal.

Between 1100 and 1500 the wind backed to E'S. and increased to force 10–11. The barometer had fallen to 987·8 and the barograph was showing a vertical line downwards. At 1200 " Carrie " was reported to be moving E. at 12 kt.

The estimated position of the ship at 1500 was 34° 40'N., 46° 14'W. At this time " Carrie " should have been in position 33° 12'N., 48° 00'W., i.e. 130 miles SW'd of us, although the strength of the wind indicated that the centre was probably closer.

At 1515 the wind suddenly backed to NE., barometer dropped to 970·0. The sky was black, visibility nil owing to spray and drizzle. It was impossible to observe the state of the sea. The wind was estimated to be over 105 kt. On the occasion when it was visible the sea appeared to be very high and confused. The swell seemed to be coming from everywhere but mainly from the southward. The wind and sea were now on the starboard beam and the vessel was rolling dangerously. An attempt was made to heave the vessel to and get the wind and sea on the starboard bow, but she would not come round into the wind. Eventually the master found that she rode the seas fairly well by putting the wind about 4 points on the starboard quarter.

By 1600 on 20th September the wind had increased even more but no estimate could be made of its strength. The sea, when it could be observed through the flying spray, was just a mass of white spume. The vessel was heeled several degrees to port by the wind pressure on goal-posts and funnel, despite the fact that the wind was well on the quarter. The sea and swell were by this time coming from the NE. The swell was very long and equal to about two lengths of the vessel (say 1,000 feet) and consequently she was riding the swell quite easily.

At 1645 the barometer commenced to rise and the wind to back slowly NW'd, decreasing slightly in force. By 1900 the barometer was 996·0, wind N., force 11. The rain had stopped and the sky became a little brighter. Visibility had improved except during rain squalls. Between 1800 and 1900 the barograph showed a sudden drop of 1 mb, thought to be due to an exceptionally violent rain squall which occurred about that time. At 1900 barometer commenced to rise again.

At 2100 on 20th September, course was resumed at normal full speed towards Sombrero Island. By 2300 the barometer had risen to 1008·8 and the wind had decreased to force 8, but was still coming from the northward.

At 0200 on 21st September, the barometer stopped its rapid ascent and began to climb more slowly. By 0700 the wind had veered to NE., force 4, the sea was moderate but there was still a heavy N'ly swell.

*Note* 1. At 1100 G.M.T. on 19th September, when the ship was stopped for engine repairs, the reported position of " Carrie " bore 278°, distant 520 miles from the ship. At 0100 on 20th, according to the last reported position and course and speed of " Carrie ", the storm would have been bearing about 272°, distant 335 miles from the ship. At 0600 on 20th the reported position of " Carrie " showed it to bear about 277°, distant 260 miles from the ship, still moving ESE. at 12 kt.

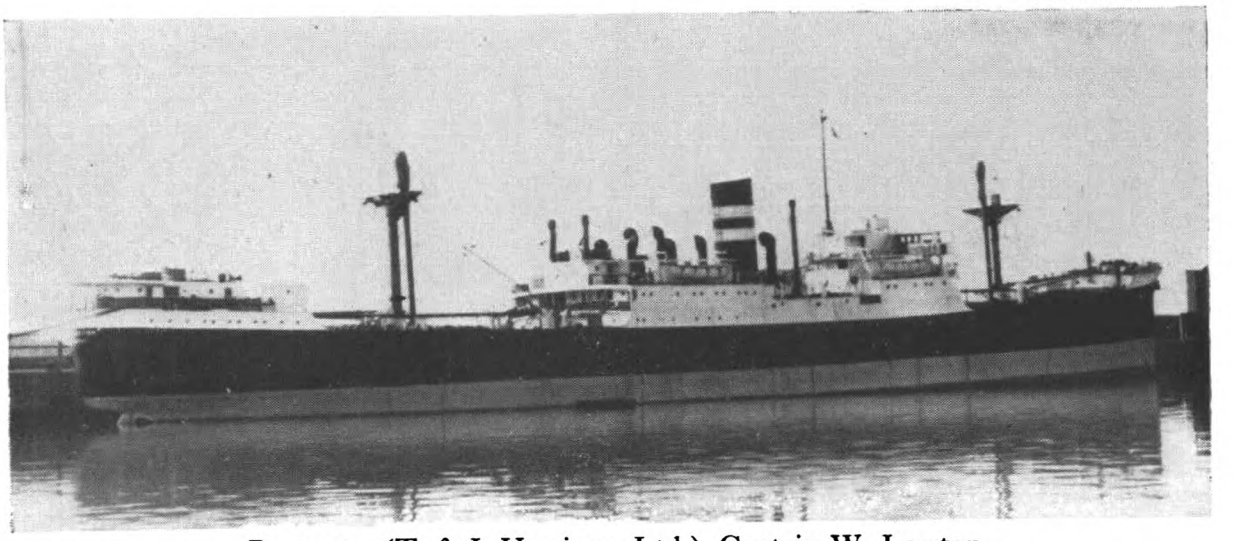
*Note* 2. This observation was forwarded to Dr. Reichelderfer, the Chief of the U.S. Weather Bureau, from whose reply the following comments are taken. A short account of this hurricane with a track chart was published on page 22 of the January number.

" The report from M.V. *San Veronico* has been noted with much interest and we have forwarded copies to our Hurricane Forecast Offices for their information.

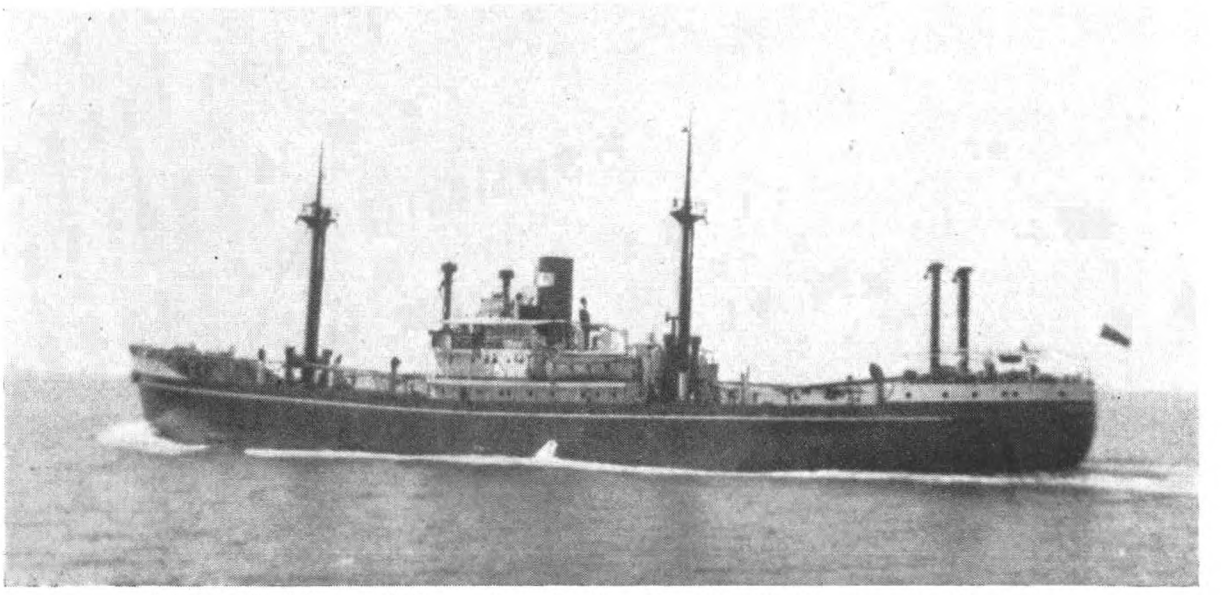
" The first warning indicating that Hurricane Carrie had developed in the North Atlantic near latitude 15° 30'N., longitude 39° 30'W., was broadcast from Washington on the evening of September 6th, 1957. Subsequent advices were broadcast every six hours until the morning of September 22nd when the storm had reached a position in East North Atlantic waters a short distance south-west of the Azores.

" In early September the circulation pattern over the eastern Atlantic resembled that found to be characteristic of periods in which tropical storms develop in the Cape Verde area. The north-eastward extension of the Azores high produced pressures above normal in the area of western Europe, while a trough prevailed near the west coast of Africa. Observations from the Cape Verdes on September 2nd showed evidence of a vortex passing just to the

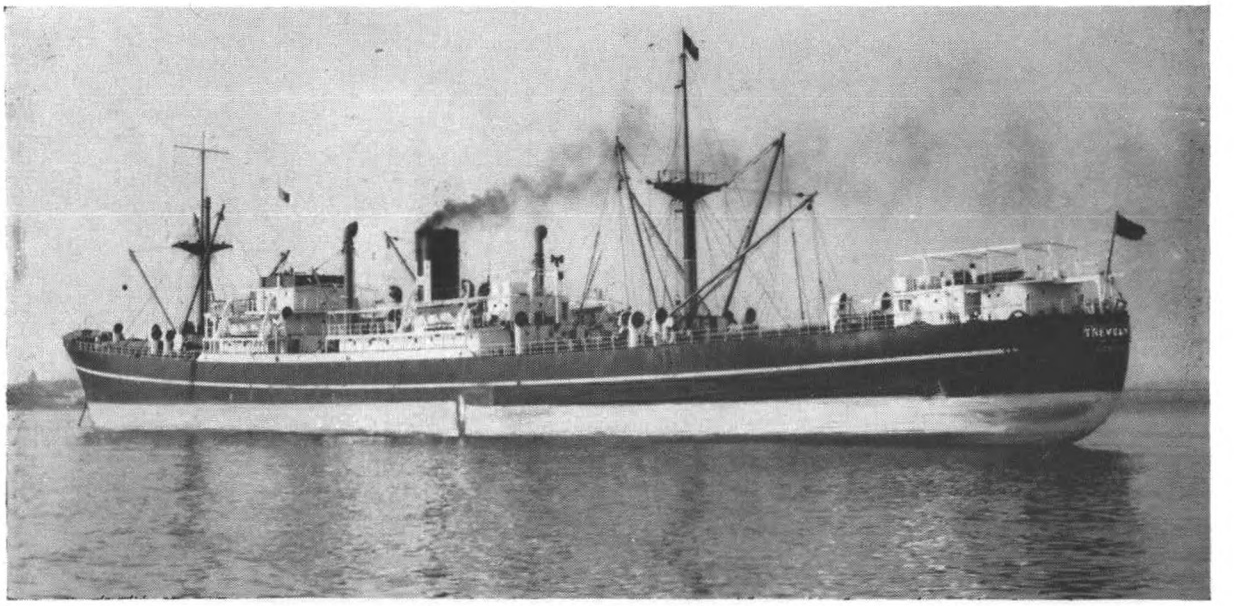
(*Opposite page* 124)



*Prospector* (T. & J. Harrison, Ltd.), Captain W. Lawton



*Sheldrake* (General Steam Navigation Co., Ltd.), Captain P. Griffiths



*Trevelyan* (Hain S.S. Co., Ltd.), Captain H. Gravell

The three ships which gained the highest markings for their meteorological logbooks during the year ended March 1958 (see page 119).

(*Opposite page* 125)

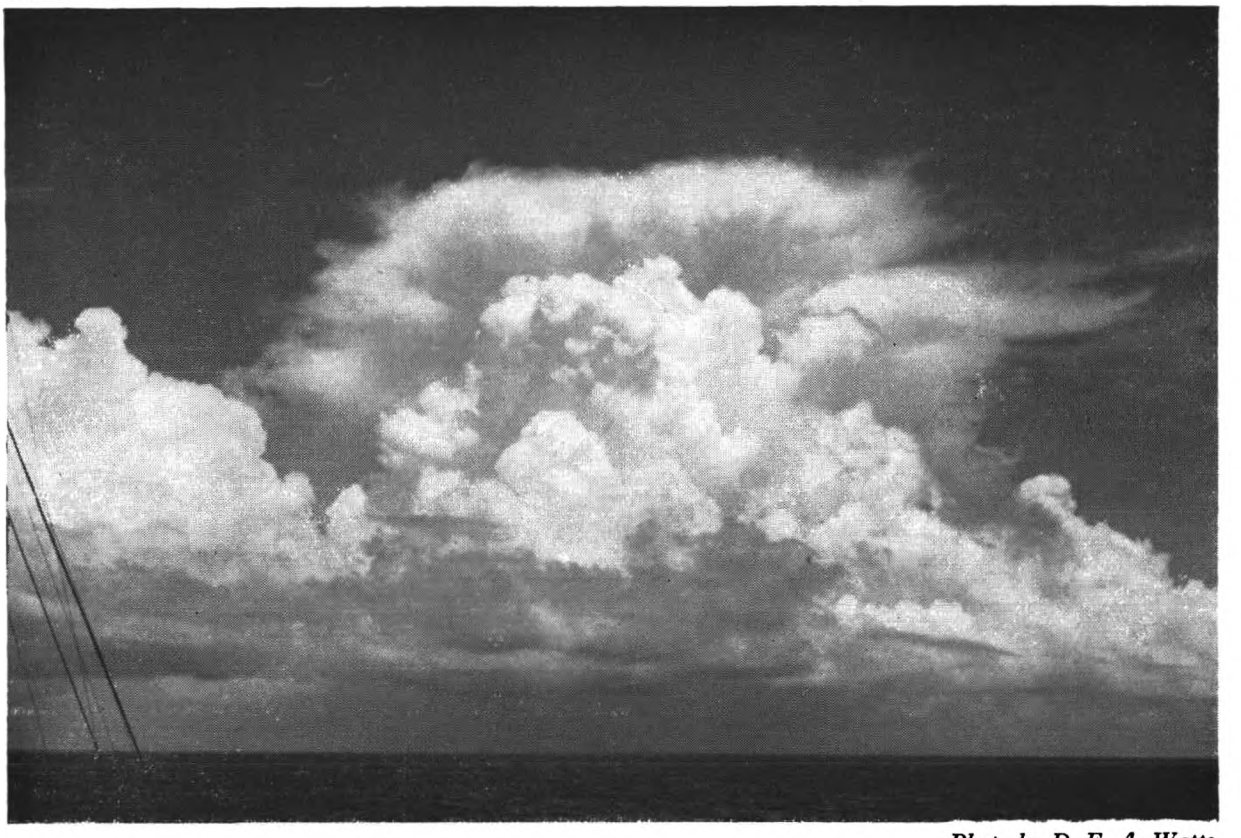


*Photo by D. E. A. Watts*

Towering cumulus and cumulonimbus observed from M.V. *Huntingdon* (see page 131).

Whale observed from S.S. *Tongariro* (see page 131).

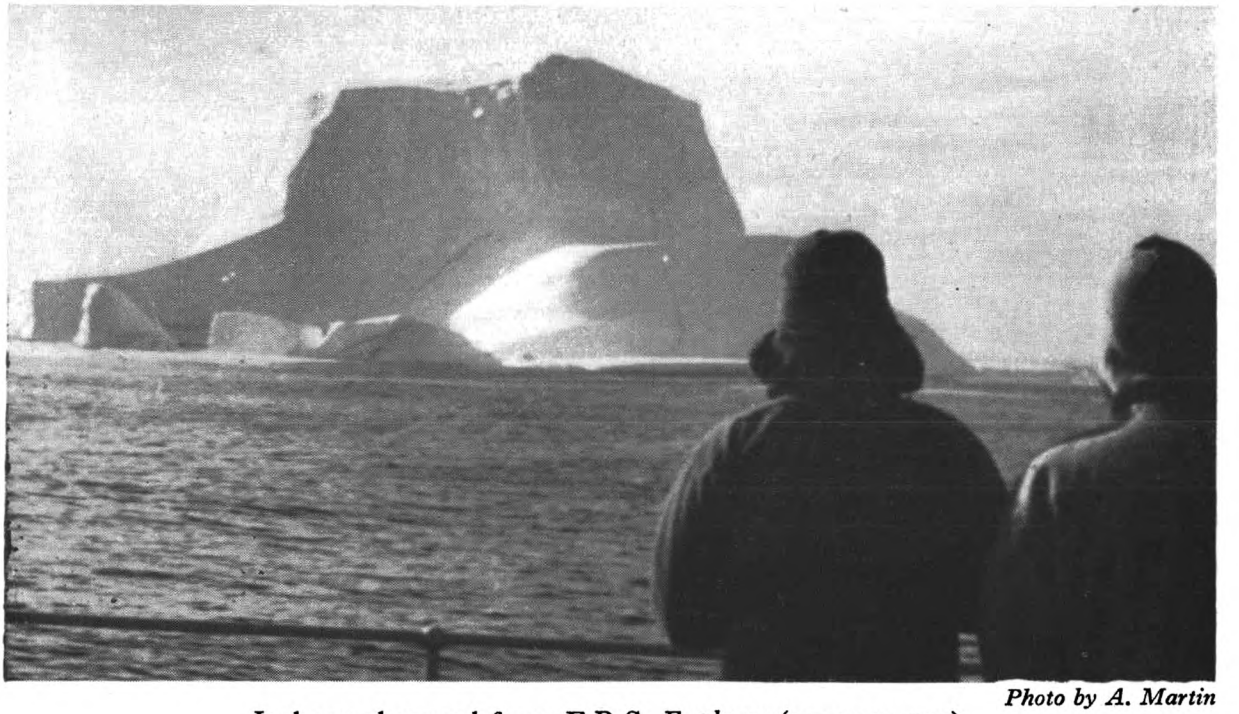


*Photo by A. Martin*

Iceberg observed from F.R.S. *Explorer* (see page 127).

south of the islands and a message from Pan Air de Brazil reported a tropical storm developing near latitude 11°N., longitude 25°W. On September 6th the *African Star*, about 700 miles west of the Cape Verde Islands, made a succession of special reports showing falling pressure, increased winds, and squalliness. The existence of Hurricane Carrie was confirmed when the 1600 G.M.T. report (somewhat delayed) showed an east-northeast wind of 80 knots and a pressure of 1001 mb. Later analyses indicated that the vortex noted on 2nd was the genesis stage of Carrie and that it moved west-northwest at about 10 knots to the position at which it was encountered by the *African Star*.

" Carrie was charted over one of the longest tracks, probably the longest track on record, approximately 6,000 miles from its origin off the African coast to near Bermuda and back across the Atlantic to the British Isles. U.S. Air Force flights from Bermuda on 7th and 21st were farther east than any previous hurricane reconnaissance flight, and the initial flight on 7th covered approximately 3,700 miles with almost 17 hours in the air. Although most of the life of this hurricane was spent outside the reach of the normal upper air observational network, data collected by reconnaissances made it possible to anticipate and forecast Carrie's meandering path with reasonable accuracy.

" When the hurricane passed to the north-east of Bermuda on 16th poor radar definition and an increase in the diameter of the eye to 40–70 miles indicated weakening. However, as it curved eastward, in advance of a trough moving into the North Atlantic, it still maintained maximum winds of nearly 87 knots for the next several days. On 21st the German sailing ship *Pamir* encountered the storm south-west of the Azores and foundered with the loss of 80 of her 86 crew. Insufficient reports were obtained to indicate the maximum wind and lowest pressures observed as it passed through the Azores the next day, but it is likely that winds of hurricane force persisted. Carrie began to assume extra-tropical features thereafter and accelerated to the north-east, reaching the British Isles with high winds on 24th and 25th and causing tremendous waves on the coast and floods over part of the U.K.

" The radio messages furnished to the U.S. Weather Bureau by the *San Veronico* during the period September 19th–21st, 1957, were of much value to our forecasters in issuing advice on this storm. Please express to Captain Spencer and his officers our sincere thanks for their co-operation on this occasion."

*Note* 3. Hurricane " Carrie " provides yet another instance of the tremendous value of a ship's observations in cases of this sort. The meteorologist-in-charge of the U.S. Weather Bureau at San Juan (Puerto Rico) in making his report on this hurricane mentioned that, although the first aircraft report was received on 2nd September, had it not been for the report of the U.S. *African Star* mentioned in Dr. Reichelderfer's note, it would have been possible to analyse every one of the surface charts until 1200 G.M.T. on 8th September, without being aware of the existence of such an intense hurricane. In other words, the hurricane could very well have travelled an additional 400 miles without being detected.

This report was published in the November 1957 issue of *Mariners' Weather Log*, which is a bi-monthly climatic review of ocean and lake areas, published by the U.S. Weather Bureau.

## SQUALL

### Japanese waters

S.S. *Malayan Prince*. Captain G. G. Rich, M.B.E. Hong Kong to Kobe. Observer, Mr. A. King, Junior 3rd Officer.

22nd July, 1957. At 1210 G.M.T. a sudden squall, with N'ly winds of force 8, came from the Japanese mainland. It was accompanied by heavy rain and severe thunder and lightning. The force of the wind bent up the windward awnings spars, as there was insufficient warning to have the awnings taken in quickly enough. The spars were made of 2½ in. diameter tubular steel.

Position of ship at noon: 32° 24'N., 133° 18'E.

## CURRENT RIP

### North Atlantic Ocean

S.S. *Imperial Edmonton*. Captain G. H. Anderson. Amuay Bay, Venezuela, to Santos. Observer, Mr. W. R. Mackay, 3rd Officer.

30th September, 1957. At 1750 G.M.T. the vessel crossed a particularly heavy current rip which had several elongated silver-grey patches of discoloured water on

its calm (eastward) side: these patches extended to the horizon. On approaching this area of demarcation it was seen to have the appearance of shallow water. The bathometer was started but no soundings were shown at 250 fm. Numerous schools of small fish were playing on the edge of the rip, and a large flock of black-and-white, and occasionally brown, gull-like birds was noticed fishing along the edge. The temperature of the sea surface rose by 1° to 82°F on crossing the rip.

Position of ship: 8° 16′N., 50° 00′W.

*Note.* This observation was forwarded to us by the Director, Canadian Meteorological Division. The current rip was observed in the region where, at this time of year, the east-going Equatorial Countercurrent originates, northward of the mouth of the Amazon, in lat. 6°–10°N. As the South Equatorial Current is flowing strongly in a NW'ly direction immediately southward of the E'ly current, it is probable that rips are formed at times between currents going in more or less opposite directions.

### Central American waters

S.S. *Loch Garth.* Captain G. S. Grant, R.D. Observer, Mr. S. F. W. Phillips, 4th Officer.

27th August, 1957, 1235 G.M.T. A current rip was encountered stretching from horizon to horizon in a N–S. line. It was approximately 1,000 ft across, with tumbling waves on the western edge. After the rip had been crossed, it slowly followed the ship for about 15 min. The speed of the vessel was 16½ kt, on a course of 297°.

Position of ship: 7° 41′N., 82° 54′W.

## DISTURBED WATER AND CHANGE OF SEA TEMPERATURE

### North Atlantic Ocean

M.V. *Windsor.* Captain F. W. Grist. Norfolk to Rotterdam. Observer, Mr. J. Boyle, 3rd Officer.

30th July, 1957. Throughout the morning the sea had been rough, but it changed suddenly in character about 1330 G.M.T., some areas becoming comparatively smooth in spite of the fact that there was no decrease in wind velocity. This region of irregularly disturbed water covered a distance of 14 miles, and while the vessel passed through it sea temperatures were taken. It was found that these fell from 63° to 58°F, but after clearing the area the temperature rose steadily to 69°.

Position of ship: 44° 00′N., 45° 20′W.

*Note.* This observation was made in the middle of the flow of the Gulf Stream, eastward of the southern part of the Great Bank of Newfoundland, where the Gulf Stream is beginning to widen by fanning out to the north-eastward. It confirms previous observations that sudden changes of sea temperature may be experienced in the main flow of the Gulf Stream, as well as near the borders of this current. Three similar observations, but with greater temperature falls, namely 20°, have been published in this journal, see pages 73 and 74 of the April 1953 number and page 27 of the January 1955 number. The positions of these three observations were S.S. *Hudson Firth*, 41° 25′N., 49° 00′W; H.M.T. *Empire Clyde*, between 41° 57′N., 48° 00′W., and 41° 23′N., 49° 07′W.; and H.M.T. *Empire Clyde*, between 39° 00′N., 50° 40′W., and 39° 56′N., 48° 23′W.

## LINE OF DEMARCATION

### Eastern Mediterranean Sea

S.S. *Tongariro.* Captain S. W. Lambrick. Aden to Suez. Observers, Mr. M. W. Carrell, 2nd Officer, Mr. N. M. Parry, 3rd Officer, and Mr. J. L. Mills-Baker, 4th Officer.

23rd September, 1957. At 1205 S.M.T. the ship passed through a very well-defined line of demarcation running in an E–W. direction. To the S. of the line the sea was moderate, glassy-looking and not breaking much, but to the N. it was very choppy with white horses. As the vessel passed through the line she sheered to port and required a turn of helm to counteract the effect. Several lines of demarcation

were passed between 1205 and 1230, some bounding patches of smooth water, while others were possibly parts of the same line. The speed of the vessel was 12 kt.

Position of ship at noon: 34° 08′N., 25° 34′E.

## DISCOLOURED WATER

### South China Sea

M.V. *Treworlas*. Captain B. W. George. Yokohama to Madras.

21st July, 1957. The vessel passed through large patches of a brownish substance which appeared to be a type of moss. It was very fine in texture and formed a scum on the surface of the water. Also seen within these patches were small white discs (maybe sea anemones), numerous small fish and driftwood.

Position of ship: 11° 22′N., 112° 46′E.

*Note.* Dr. T. J. Hart, of the National Institute of Oceanography, comments:

" This observation is almost certainly of *Trichodesmium*. The small white discs could not have been sea anemones for these are sessile bottom-living animals."

## LARGE ICEBERG

### Denmark Strait

F.R.S. *Explorer*. Captain E. A. Bruce. Aberdeen to Icelandic waters. Observers, the Master, Mr. F. C. Chisholm, 1st Officer, and Mr. J. Craig, Senior Fishing Mate.

20th September, 1957. An iceberg was circumnavigated in 66° 29′N., 27° 54′W., at 1400 G.M.T. It was 310 ft high and 986 ft long at the waterline. A few small pieces of ice lay to leeward of the berg, otherwise no ice was present. It was well preserved, white, and with no discoloration other than three blue-green veins running transversely down one side. A photograph is shown opposite page 125.

Observations taken seven cables off were as follows: Air temp. 42°F, wet 40·5°, sea 41°. Wind SW'S., force 2. Visibility excellent. Sea slight, with long S'ly swell. A sounding gave 180 fm, suggesting that the berg was grounded.

## ABNORMAL RADIO COMMUNICATIONS

### Barents Sea

S.S. *Sandhoe*. Captain A. Pauling. Hull to Archangel and Archangel to Barry Roads. Observer, Mr. William Dobbie, Radio Officer.

4th–23rd September, 1957. After rounding the Nordkapp, H/F communication with Portishead Radio was extremely difficult and it was not possible to clear all the messages. The same bad conditions prevailed until Nordkapp was passed on the homeward voyage, yet while the vessel was off Murmansk very good signals were exchanged with Irirangi, New Zealand.

*Note.* Mr. G. O. Evans, of the Radio Research Branch of the G.P.O., comments:

" The extremely difficult radio conditions experienced by the *Sandhoe* were due mainly to the fact that the greater part of the Great Circle path from Portishead to Nordkapp lies in the Northern Auroral zone. Although no severe magnetic storms occurred during August, moderate magnetic storms were recorded in the United Kingdom towards the middle and end of the month and during the latter period a solar flare was recorded.

" In the case of Murmansk-New Zealand, only part of the Great Circle path lies in the Auroral zone, and this may well explain why signals could be received from New Zealand whereas communication with the United Kingdom was difficult."

## VOYAGE TO IGARKA

The following note was written by Captain S. B. Judge, O.B.E., master of the S.S. *Moto*, in her meteorological logbook.

(*a*) The Yenesey River being of such great length has peculiarities which are not generally known. For instance, at Krasnoyarsk, 1,700 miles from the sea, the winter ice begins in middle October and persists until middle May, when a break-up

takes place. At Igarka, 1,200 miles N. of Krasnoyarsk, where the river also freezes in mid-October, the break-up occurs about 5th June annually. When this happens the Yeneséy at that spot rises to about 80 ft above datum. Large wooden barges are frequently seen stranded 50 or 60 ft above the river level, and the shores are littered with tree trunks to a height far above normal level. The river ice is swept out to sea and thus impedes the seasonal navigation, sometimes even as late as early August.

(*b*) This season (1957) the first 12 vessels to Igarka were routed by the north of Novaya Zemlya (Cape Zhelaniya) because the Kara Strait was completely blocked by old ice, most of which was two years old.

The ice off northern Novaya Zemlya was fresh winter ice and very hard, with clear white, green and blue colouring. Several polar bears were seen on this ice (22nd–23rd July, 1957).

The heavy dangerous ice in Kara Strait was encountered by us on our homeward trip (11th–12th August, 1957).

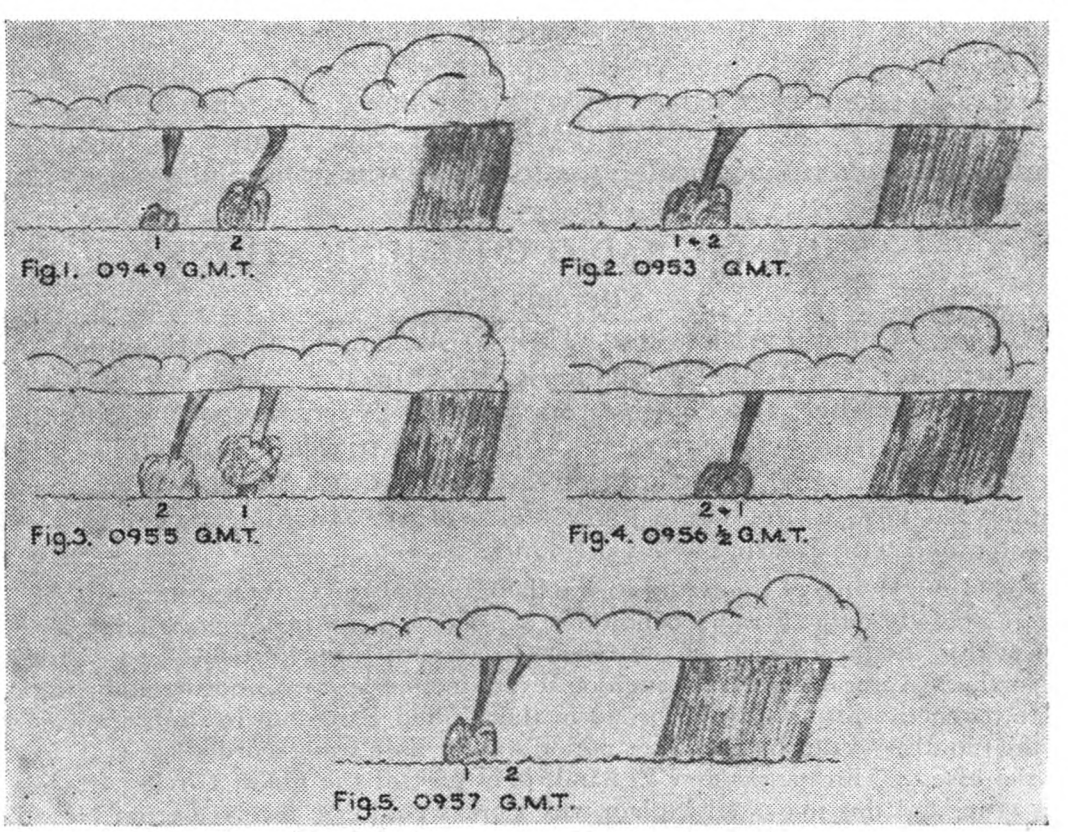
***Note.*** **This information has been forwarded to the Hydrographer of the Navy, who states that extracts from the report will be used in due course for appropriate Sailing Directions.**

## WATERSPOUTS

### North Atlantic Ocean

S.S. *Esso San Juan.* Captain C. F. Fenwick. Trinidad to Rio de Janeiro. Observer, Mr. R. M. Shave, 2nd Officer.

23rd August, 1957. At 0949 G.M.T. two waterspouts were observed bearing 200°




at a distance of approximately 8 miles. They were associated with a layer of towering white cumulus which had a well-defined flat base at an elevation of 1½° above the horizon. The background was clear apart from a very dark cloud reaching the horizon about 2° N. of the waterspout and approximately 15 miles away. At 0949 No. 2 waterspout, which was 1½°N of No. 1, appeared to be moving in a clockwise direction around No. 1 (Fig. 1). At 0953 they appeared as one (Fig. 2). At 0955 No. 2 was 1°S. of No. 1 (Fig. 3). At 0956½ they appeared as one again (Fig. 4). At 0957 No. 2 was 30′N. of No. 1 (Fig. 5) and it disappeared at 0957½.

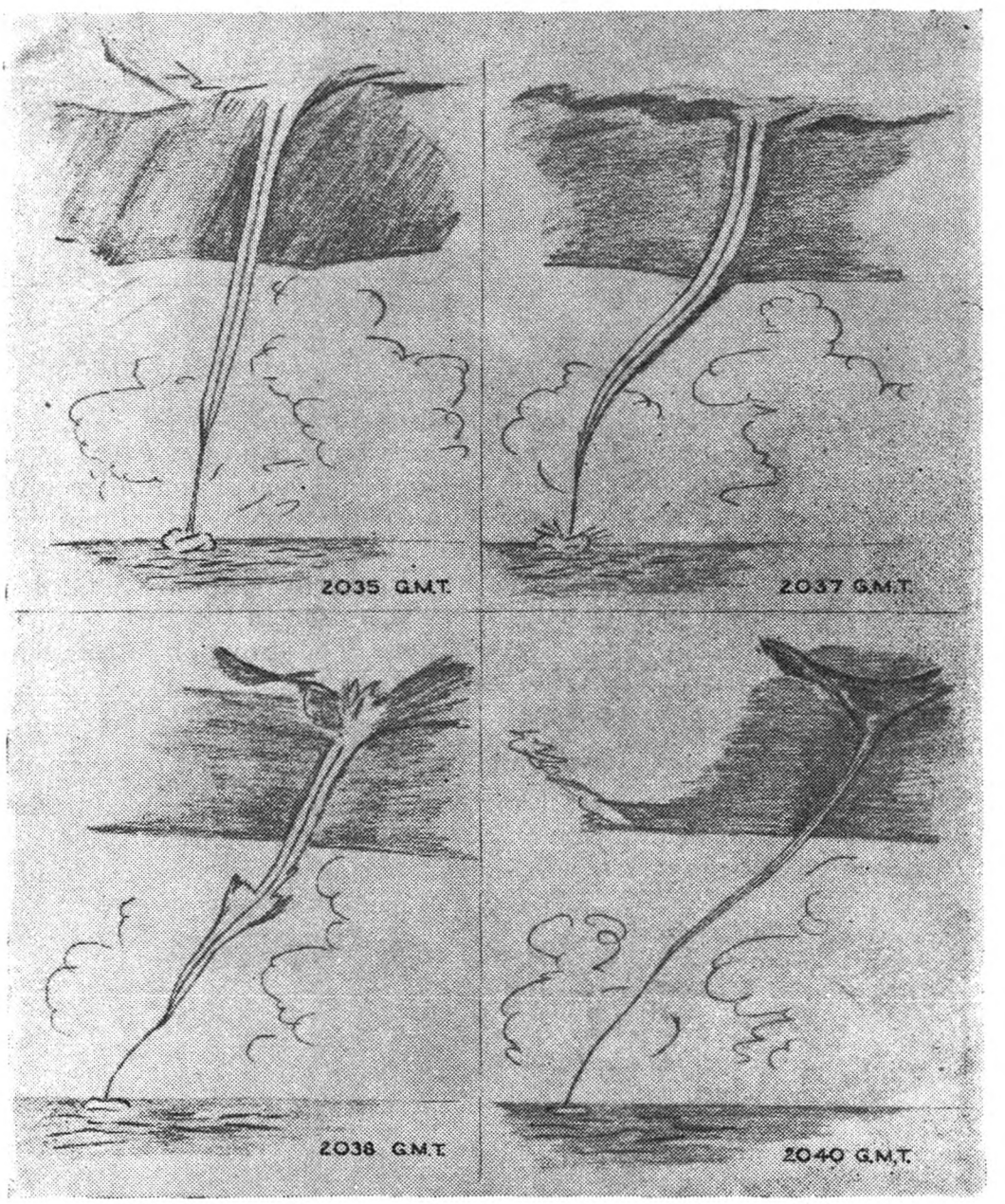
No. 1 disappeared at 0958½. Air temp. 81°F, wet 76°, sea 84°. Wind E, force 2. The sky was 3/4 covered with Ac, As, Cu and Cb.

Position of ship: 8° 33′N., 51° 07′W.

*Note.* This observation is of great interest. The rotation of one waterspout around another is probably a very rare phenomenon, as we do not remember ever having received a similar observation.

M.V. *British Union.* Captain R. T. C. Wright. Swansea to Galveston. Observers, the Master, Mr. I. H. Wall, Chief Officer, Mr. J. E. Kemp, 2nd Officer and Mr. R. Hyde, Apprentice.

28th August, 1957. At 2034 G.M.T. a waterspout was seen about 4 miles to the




NNE. of the vessel. When sighted it was already fully developed and beginning to dissipate (see the accompanying sketches). The spout was a brilliant white in the sunshine, but it was noticed that there was a grey streak down the centre of the column, which was bent in an up-wind direction. There were indications of anti-clockwise rotation at the base where dense spray was being thrown out and upwards to about 50 ft. The up-wind side of the spout became ragged as the process of

dissolution began, and at the same time the spray at the base became more streaky and patchy. The general cloud base was estimated at between 1000 and 2000 ft, but it was rather lower near the column. There was no rain in the vicinity at this time, but shortly before a moderate thunderstorm had been experienced with frequent showers of rain. The beginning of a waterspout had also been seen at about 2020, but it did not develop.

Position of ship: 31° 28′N., 68° 25′W.

### Eastern Mediterranean Sea

S.S. *Tongariro*. Captain S. W. Lambrick. Aden to Suez. Observers, the Master, Mr. J. L. Mills-Baker, 4th Officer, and Mr. B. H. Preston, 2nd Radio Officer.

23rd September, 1957. A waterspout was observed bearing 330° at a distance of

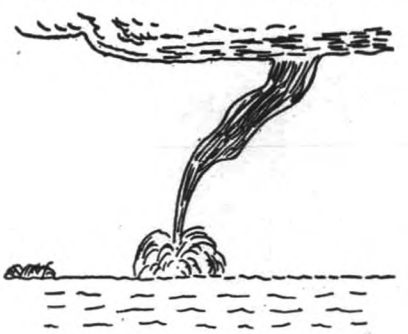


Fig. 1. 1110 G.M.T.

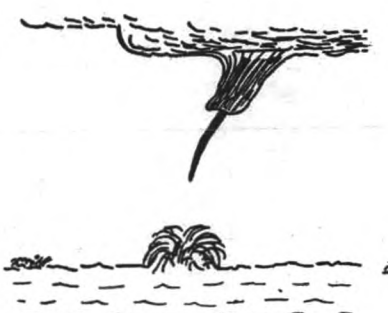


Fig. 2. 1115 G.M.T.

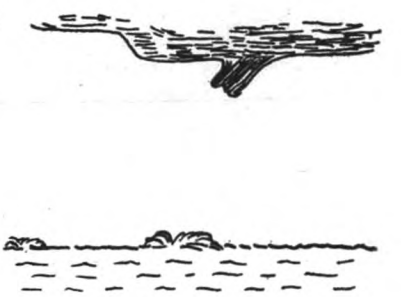


Fig. 3. 1118 G.M.T.

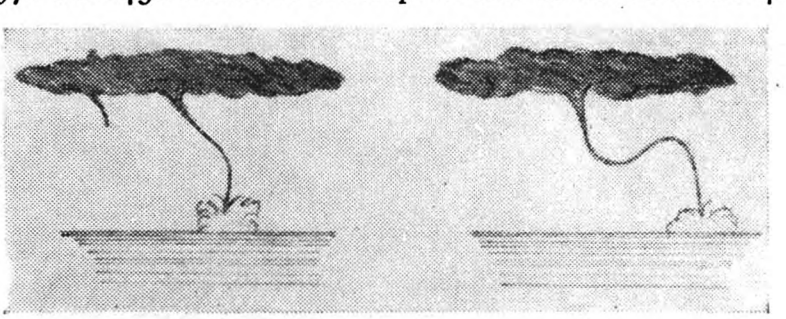
5 miles, having an approximate diameter of 300 ft and a height about 1700 ft. The spout lasted about 8 min, the funnel, which hung from low Cb at an angle of 45°, having a mushroom of spray at its base (Fig. 1). The column broke at the base and returned to the cloud, but a thin tail appeared for a moment, without, however, rejoining the sea (Fig. 2). Half a mile from the place where the spout met the sea, a small whirlwind was raising the surface a few feet, but no funnel cloud developed (Fig. 3). After the spout had passed, the sea was calm in the area, but it seemed very turbulent over a patch about ½ mile across. The direction of rotation of the spout could not be determined. Wind SSE., force 4.

Position of ship: 34° 13′N., 25° 22′E.

### Australian waters

M.V. *Port Pirie*. Captain G. G. Langford. Adelaide to Sydney. Observers, Mr. J. R. Bell, 3rd Officer, and Mr. D. Shear Smith, Apprentice.

6th July, 1957. At 0430 G.M.T. a waterspout was observed about 40° on the port



(1) (2)

bow at a distance from the ship of approximately 5 miles. At first it had the appearance shown in Fig. 1, but it soon decreased in activity, to develop again to a greater extent, assuming the shape shown in Fig. 2. This condition persisted for about 10 min, then the waterspout gradually dissipated. During the remainder of the afternoon two other waterspouts were sighted but at a much greater distance from the ship. Air temp. 60°F, dew point 41°.

Position of ship: Off Green Cape, N.S.W.

## CLOUD PHOTOGRAPH

### Caribbean Sea

M.V. *Huntingdon.* Captain J. D. Guyler. Curaçao to London.

The fine photograph of towering Cu and Cb reproduced opposite page 125 was taken by Mr. D. E. A. Watts, Senior Radio Officer, on 19th September, 1957, at 1630 G.M.T. while the vessel was off Bonaire Island, Netherlands West Indies. Weather during the afternoon: occasional heavy showers of rain. Air temp. 82°F, sea 85°, wind E'N, force 4.

Position of ship at 1800: 12° 48'N., 67° 42'W.

## JUMPING WHALE

### Off Stromboli

S.S. *Tongariro.* Captain S. W. Lambrick. Port Said to Genoa. Observers, the Master, Mr. N. M. Parry, 3rd Officer, Mr. P. Stephenson, Chief Radio Officer, Mr. B. H. Preston, 2nd Radio Officer, and other crew members.

25th September, 1957, 1340 G.M.T. While steaming at 12 kt on a course of 316°, the vessel overtook a whale which was jumping almost clear of the water (see photograph opposite page 125). At the height of each jump its body was at an angle of about 60° to the surface and all but its tail was in mid-air. Each time it seemed to attempt to arch its back, but belly-flopped back into the sea, making a large splash. In all, it jumped about five times before coming abeam of the propeller. It was afterwards seen " blowing ", astern. This did not take place while actually jumping.

The whale was estimated to be between 30 and 40 ft in length. It had a grey-brown back and white undersides. The dorsal fin was noticeably small and some observers did not see it at all and said there was no dorsal fin. The nose was blunt and rather similar to that of a Pan American " Clipper " aircraft. To the observers, the whale appeared to be enjoying itself immensely.

*Note.* Photographs taken of the whale, forwarded with the meteorological logbook, were sent to the National Institute of Oceanography. The Secretary commented as follows:

" We are very pleased indeed to have such records of a sight which must have been very rarely photographed."

## DEVIL RAY

### North Pacific Ocean

M.V. *Parima.* Captain G. A. Gibbons. Los Angeles to Cristobal. Observers, Mr. D. Hatton, 2nd Officer, and Mr. J. N. Wright, Senior Radio Officer.

23rd August, 1957. At 2215 G.M.T. a large fish, like a ray, was observed. It was approximately 3 ft wide and 2 ft long, with two protruding white eyes on horns—rather hideous to see.

Position of ship: 26° 51'N., 114° 45'W.

*Note.* Mr. N. B. Marshall of the Natural History Museum comments:

" The large ray observed by the M.V. *Parima* would appear to be a devil ray or devil fish (family *Mobulidae*). These rays have a ' horn ' on each side of the head, the horn being formed from the forward part of the pectoral fin. At the base of each horn is the eye."

## PORPOISE RIDING WAVE

### Algerian coastal waters

S.S. *Clan Chattan.* Captain R. R. Baxter. Birkenhead to Algiers. Observer, the Master.

8th August, 1957. While coasting about 3 miles off Algeria, making 13¼ kt through the water, a cetacean (believed to be a porpoise), about 10 ft in length, took station and rode our starboard quarter wave for about 10 min. There was no wind and the sea was glassy calm, so the animal was visible all the time as it kept

perfect station about 50 ft out from the line of the ship's side, where the wave was at its maximum height. The animal remained in the body of the wave except when it moved ahead a few inches to allow its blow-hole to be in front of the wave to take a breath. I have seen cetaceans riding the bow-wave on many occasions, but this is the first time I have been able to observe accurately one riding the quarter-wave.

*Note.* Dr. F. C. Fraser of the Natural History Museum comments:

" The observation of the small cetacean riding on the quarter wave is very interesting. I, like the observer, have often seen cetaceans riding on the bow waves, but I cannot recall any records of them taking up the other position. I expect, however, they are willing to exploit its power just as they do that of the bow wave."

## JELLYFISH

### North Pacific Ocean

S.S. *Orion.* Captain J. D. Birch, D.S.C., R.D. Honolulu to Vancouver. Observer, Mr. W. J. Denly, Junior 3rd Officer.

25th August, 1957. At 1045 S.M.T. the sea was observed to be thickly speckled with transparent, colourless jellyfish, circular in shape and about 2–4 in. in diameter. When viewed through binoculars a dark centre could be seen and also what appeared to be a small vertical fin. No tentacles or " feelers " could be seen and the observer is uncertain as to whether they were Portuguese men o' war or not. The sea continued to be dotted with these jellyfish until dark, some of them lying in bands, down-wind. Steaming at 17·8 kt the vessel had passed through a collection of these creatures at least 164 miles wide. Air temp. 60°F, sea 65°. Wind N'W., force 3. Slight sea; low swell.

Position of ship at 1045 S.M.T.: 44° 18'N., 132° 06'W.

*Note* 1. Mr. A. K. Totton of the Natural History Museum comments:

" There are only two jellyfish known to me that have a vertical fin, but neither Physalia nor Vellela are circular. A young Physalia might appear to be colourless, but a Vellela would be dark blue when alive, colourless if dead, perhaps with a dark centre if moribund. Observations of this sort on the distribution of these two animals, especially of Physalia, is exactly what we need. It is therefore especially tantalising that we cannot definitely identify the animals.

" There is a third jellyfish that is circular and that has a dark blue centre (like the pupil of an eye) but has no vertical fin. I would have said that 2 in. would be about its outside diameter. It would just break the surface but not lie well above it as Physalia does. Its name is Porpeta and it is related to Vellela."

*Note* 2. An observation of Portuguese men o' war, by M.V. *San Veronico,* with a photograph, was published in the last issue of this journal.

## PHOSPHORESCENCE

### Arabian Sea

M.V. *Waiwera.* Captain T. H. Davies. Aden to Colombo. Observers, the Master, Mr. H. P. M. Lawrence, Chief Officer, Mr. E. A. Outen, 3rd Officer, and Mr. T. Ffowes Williams, 4th Officer.

16th September, 1957, 1530 G.M.T. Patches of phosphorescence resembling air bubbles were observed within the glare of the ship's deck lights. After shining the Aldis lamp for a few seconds on the surface of the sea, at various points on the bow, the light seemed to be absorbed and a dull phosphorescent glow could be seen for a short period after the lamp was switched off. No phosphorescence was seen at the time in the bow-wave. During the same period, an occasional reflection —resembling a cat's-eye reflector on a road—was seen in the beam from the lamp, on the surface of the water. These patches of phosphorescence were seen at frequent intervals for about an hour, after which no more were observed. Air temp. 81°F, sea 82°. Wind NNW., force 2.

Position of ship: 8° 42'N., 69° 27'E.

M.V. *British Patience.* Captain W. D. Armstrong. Bandar Mashur to Suez. Observer, Mr. R. J. Higgins, 3rd Officer.

22nd July, 1957. At 1715 G.M.T. the vessel passed through a brilliant patch of phosphorescence, roughly circular in shape and about 3 miles across. When first seen it was on the port bow and illuminated the horizon quite brilliantly: it had the appearance of being composed of numerous low-lying lights rather like a large fishing fleet. On passing through the patch, the whole area around the ship was brilliantly lit and a very bright light was given off by the bow-wave. The phosphorescence appeared only at the crests of the breaking waves, the troughs being quite dark. The patch was moving in a direction similar to the wind and sea, and as it was left astern the horizon became very well-defined, illuminated by a silvery light. Wind SSW., force 5. Sea moderate to rough.

Position of vessel: 15° 34′N., 53° 00′E.

## Indian Ocean

S.S. *Tabaristan.* Captain E. C. Thompson. Bandar Shapur to Durban. Observer, Mr. G. Davies, 3rd Officer.

16th July, 1957. At 2100 S.M.T. the vessel passed through a large area of phosphorescence. This took the form of a great number of spheres about the size of a football, which were flashing on and off with great brilliance, at various intervals of time. The spheres were in groups and lying, apparently, just below the surface, in long curving lines. It took the ship, travelling at 9 kt, approximately 3 min to pass through the phosphorescence. Air temp. 80°F, sea 80°. Sea rough.

Position of ship: 7° 14′N., 59° 16′E.

M.V. *City of Chester.* Captain T. S. Dennis. Colombo to Aden. Observer, Mr. R. M. Jones, 3rd Officer.

29th July, 1957. Between 1800 and 2000 G.M.T. five displays of bright phosphorescence were seen. Each started as a bright green spot which expanded radially, in about 3 sec, to become a circular area of about 400 ft diameter. The phosphorescence within this area persisted for a further 10 sec or so, and appeared to be due to the presence of numerous small fish just below the surface. Apart from occasional flashes from isolated fish no other type of phosphorescence was seen. Air temp. 80°F, sea 82°. Wind W'ly, force 3, with moderate W'ly sea and swell.

Position of ship: 8° 56′N., 68° 30′E.

S.S. *Makalla.* Captain H. Scurr, M.B.E. Colombo to Aden. Observer, Mr. M. T. L. Woodcroft, 3rd Officer.

25th September, 1957. At 2300 A.T.S. the vessel passed through a band of exceptionally brilliant phosphorescence. Millions of small luminous blots appeared to be rushing to the surface, giving the water an appearance somewhat similar to the "Milky Way". The width of the band was approximately 400 ft and it extended as far as the eye could see on either side of the vessel. At 2310 a second band was entered, this time about 100 ft wide and extending on each side of the ship for about 200 ft. It was far more brilliant than the first one and was visible at over 800 ft beyond the stern. Sea temperature 86°.

Position of ship: 7° 52′N., 74° 48′E.

## Off Antofagasta, Chile

S.S. *Potosi.* Captain D. I. Jones, D.S.C., R.D.

16th September, 1957. Between 0100 and 0700 G.M.T. while proceeding S. along the coast of Chile, a very bright display of phosphorescence was seen which had the effect of lighting up the crests of the rippled sea, and giving it the appearance of being covered with "white horses" such as would be experienced in a gale. Towards the seaward horizon there was a bright glow, and landwards there was

also a glow which caused the coastline to show up black and clear. At times there were bright streaks below the surface which might have been due to the presence of large fish. Air temp. 59°F, wet 54°, sea 63°. Wind SE., force 1. Sea rippled with slight swell. Weather overcast.

### South Pacific Ocean

M.V. *Condesa.* Captain E. Lougheed. Panama to New Zealand. Observer, Mr. D. R. Williams, 2nd Officer.

26th September, 1957. Between 0300 and 1200 G.M.T. very marked phosphorescence was observed in the sea. Large blobs of luminescence up to about 6 in. in diameter were frequently seen, while the whole surface of the sea, as far as the horizon, appeared to glow with a sickly green light. Phosphorescence was also quite noticeable in the swimming pool, which is kept continuously full by means of the deck service line. The log line appeared to drip bluish-green fire as it tightened and slackened in the water. The display ceased exceedingly abruptly as though a switch had been turned off, instead of fading away gradually as is often the case.

Position of ship at 0600 G.M.T.: 10° 54′S., 138° 24′W.

## ABNORMAL REFRACTION

### North Atlantic Ocean

S.S. *Sheldrake.* Captain A. E. Guest. Hudson Bay to Montreal. Observer, Mr. P. Griffiths, 2nd Officer.

10th September, 1957. While on passage from Great Whale River to Montreal considerable distortion of the sea horizon was observed during most of the day. Noon position established by terrestrial bearings was 59° 24′N., 62° 49′W. A meridian altitude was taken at noon which differed from the terrestrial observed position by 10 min northwards, although the horizon appeared to be continuous and well-defined under the sun. The horizon, in places, sloped upwards from the horizontal for quite a considerable distance and abruptly fell to its original level, giving the appearance of a line of cliffs, seen end on. A few icebergs appeared distorted and were visible at over 25 miles distance.

### South Atlantic Ocean

M.V. *City of Johannesburg.* Captain J. B. Maclaren. Cape Town to Port Elizabeth. Observers, Mr. J. M. Knight, 3rd Officer, and Mr. H. McGowan, Radio Officer.

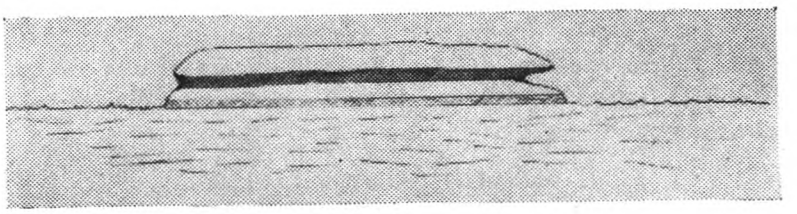
5th September, 1957, 0900 G.M.T. The skyline, over an arc of about 20°, bearing 120°, was considerably distorted, having the appearance of a low hill which descended in a series of undulations to the level of the true horizon. The sea was a deep blue and the sky very light, but in the direction of the refraction there were strips of grey-blue which resembled fog. A cargo vessel in the vicinity was seen indistinctly at times due to rippling of the intervening air, while vessels emerging from the haze in the E. appeared and disappeared as if passing through fog banks. Sextant angles gave a difference of between 10 and 15 min between the two levels of the horizon. Throughout the whole morning the effects of abnormal refraction persisted, but the conditions at 0900 were the most extreme. Air temp. 73°F, wet 63°, sea 64°. Wind N'ly, force 1–2.

Position of ship: 34° 30′S., 23° 10′E.

### Red Sea

S.S. *Leicestershire.* Captain H. B. Peate, D.S.C., R.D. Port Said to Brixham. Observers, Mr. M. J. Collins, Senior 3rd Officer, and Mr. H. Bonsor, Junior 3rd Officer.

11th July, 1957, 1145 G.M.T. When viewed from the deck below the bridge at



40 ft above the sea, Barra Musa Kebir, a coral islet about 10 ft high and 12 miles distant, had a hard, white look in the sunshine, but, from the wing of the navigating bridge (height of eye 50 ft), it was seen to have a sandwich-like appearance, see accompanying sketch. There was a dusky band at the base of the island, showing the effect of slight refraction above the horizon. Above this there was a clearly defined dark band, and, higher still, a very clear complete erect image of the island. From the compass platform (height of eye 60 ft) it was extremely difficult to see it at all. Other objects, Hindi Gider Lighthouse and two ships, showed no refraction effects at all, when observed at the same time. Dry bulb 95°F, wet 82°, sea 87°. Wind SSW, force 2.

Position of ship: Off Port Sudan.

## GREEN SKY COLORATION

### South Pacific Ocean

M.V. *Port Napier*. Captain P. S. Ball. Balboa to Auckland. Observers, Mr. A. L. Moody, 3rd Officer, and Mr. R. J. Gollogly, 4th Officer.

20th July, 1957, 2245 G.M.T. Green coloration of the sky was observed over an arc of horizon from SW. to S. There was 7/8 Sc present. Later in the afternoon the sky took on a most unusual appearance. To the S. and SW. it was still a light greenish-blue and most vivid up to an altitude of about 10°, the level of the base of the Sc sheet then dissolving. Visibility was remarkable, the horizon to the westward being unusually clear. The tops of Cu, grey-green in colour, were clearly seen at an estimated distance of 50 miles and crepuscular rays could also be seen faintly. At 0030 G.M.T. a bank of Ac was tinged red and pink, with the sun now bearing 320°. Before these observations there had been almost continuous rain.

Position of ship at 2245 G.M.T.: 29° 21′S., 152° 20′W.

## GREEN FLASH

### North Atlantic Ocean

M.V. *Bellerophon*. Captain H. H. Sanderson. Genoa to Amsterdam. Observer, Mr. P. G. Morris, 4th Officer.

7th September, 1957. At 0640 G.M.T. the sun, observed through the ship's telescope, was seen to rise normally, apart from a little distortion of the upper limb, which was rimmed with green light. As the lower limb left the horizon, a small mushroom-shaped patch, emerald green in colour, appeared on the highest point of the green rim. The patch then became detached from the limb, rising a little, but remained visible for about 10 sec. A few minutes later a similar patch appeared, but it was not easy to observe as the sun was now well above the horizon. The green coloration on the upper edge of the sun's disc persisted until the sun was fully its own diameter above the horizon. During the appearance of the patches the width of the green coloration on the limb increased. It then gradually got thinner until the time of its disappearance. A little As was present near the horizon and the air was clear.

Position of ship: 36° 25′N., 7° 29′W.

*Note.* The observer's account has been amplified to include information derived from the coloured sketches sent. They show that the sun, deep yellow in colour inclining to orange, was in the middle of a patch of primrose-coloured light, fairly well defined but changing somewhat in form during the observation. The long persistence of the green rim is unusual.

## AURORA

*Note.* We are glad to see the continued interest in aurora observations. These have been received from 33 ships in addition to these published below. All have been forwarded in full to the Aurora Survey.

### North Atlantic Ocean

S.S. *Ingleby.* Captain R. H. Anderson. Observer, Mr. H. Sennett, 3rd Officer.

19th August, 1957, at 0130 G.M.T. A brilliant display of aurora was observed in the form of a near semicircle of whitish light over an arc of 120°, the ends bearing 271° and 031°.

At 0151 aurora was seen in truly magnificent display, consisting of a roughly semicircular arc, the ends of which bore 279° and 041°, with whitish light arranged in various ways. Some of these were vivid straight beams which shone out from the main arc, others were wavy curtains supported by stays of vertical white light, the whole lighting up the sky as vividly as moonlight. At the same time Comet Mrkos, 1957d, bore 321° and although the lights of the aurora were very bright its light shone through the display. At the same time the last quarter moon rose bearing 059½° on a perfectly clear horizon and for some 6 min was subjected to some unusual distortion. At one time the moon took on the shape of a boomerang.

Position of ship: 50° 44′N., 50° 00′W.

S.S. *Sheldrake.* Captain A. E. Guest. Montreal to Hudson Bay.

30th September, 1957. At 0000 G.M.T. a fine display of aurora was observed. From a brilliant centre overhead at about 80° altitude, rays fanned out to the NW. and SE.: the NW. arm of fan reached about 60° altitude, the SE. arm merged into another display at about 45° to the horizon. The display was observed for a period of about 15 min with frequent variations in brilliance.

Position of ship: 54° 50′N., 56° 48′W.

### Gulf of St. Lawrence

S.S. *Lakonia.* Captain R. McNie. Observers, Mr. N. Dalziel, 1st Mate, and Mr. C. Langmands, Cadet.

29th September, 1957, at 2315 G.M.T. About 1 hour after sunset a very unusual aurora was observed. All lines of light appeared to start about 10° above the horizon and radiate to one point. The light varied in colour with very large portions of red and streaks of purple, orange and silver all alternating slowly. The apex of the cone appeared first at about 60° altitude to the SE. and moved slowly until directly overhead and then slightly northwards before disappearing. This unusual convergence of the rays lasted for about 20 min, gradually dispersing, leaving streaks of silver and patches of red, mostly in the northern portions of the sky.

Position of ship: Gulf of St. Lawrence.

### Gulf of Mexico

M.V. *Cape Grafton.* Captain P. Smith. Corpus Christi to Panama. Observers, Mr. F. Saunders, 2nd Officer, and Mr. A. MacBain, 3rd Officer.

15th September, 1957, at 0610 G.M.T. Bright reddish hue was observed in the northern sky for 15 min. At 0835 it was observed again, very much brighter and covering the greater portion of the northern sky to an altitude of from 40° to 50°. It lasted for about 35 min, then slowly faded and was finally obscured by cloud. Bright moonlight at the time of observation.

Position of ship: 27° 23′N., 96° 05′W.

### South Indian Ocean

S.S. *Pipiriki.* Captain A. C. Davies. Aden to Sydney. Observers, Mr. R. B. Blood, 2nd Officer, and Mr. D. W. Field, 1st Radio Officer.

29th September, 1957. At 0035 ship's time (1805 G.M.T.) a bright red patch in

the sky was observed through a break in the low cloud at an altitude of 5°, between bearings 138° and 150°. The colour remained constant without flickering for 10 min and then began to fade until it had finally almost disappeared 5 min later, when the break in the cloud closed in. Stars were visible in the patch, their magnitude and colour appearing normal.

Position of ship: 22° 00′S., 93° 54′E.

M.V. *Donegal.* Captain R. F. Hellings. Aden to Fremantle. Observer, Mr. B. P. Telfer, 2nd Officer.

30th September, 1957. At 0145 S.M.T. (in 28° 45′S., 108° 51′E.) a break in the cloud revealed that the sky was coloured a deep crimson near the horizon, changing to a soft red with increasing elevation, but there was too much cloud then to allow of proper observation or the making of any measurements. A little later, a faint rose-coloured tint was seen towards the S. which gradually deepened to a darkish red as it spread up and outwards. After approximately 5 min, rays of white light ascended vertically from the horizon, reaching various elevations. Meanwhile the red glow had assumed the form of an arch with apex at 25° elevation, bearing 173°, the ends meeting the horizon on bearings of 135° and 220°. Two small patches of greenish light resembling clouds, appeared at the top of the arch, about 5° apart, but at the same altitude. After a further 5 min the white rays, which were now steady, began to fade and a red glow only was left. The glow faded to a rose colour and finally disappeared at 0330.

Position of ship at 0330: 29° 12′S., 109° 48′E.

## Pacific coast of North America

S.S. *Loch Garth.* Captain G. S. Grant. New Westminster to Port Alberni. Observers, the Master and Mr. S. H. Hobbs, 3rd Officer.

22nd September, 1957, 0345 G.M.T. An arc of whitish light appeared in the sky, centred approximately N. From then until 0500 a bright display of aurora was visible with frequent changes in form. An outstanding arc occurred at 0445 at an altitude of 20°, bearing between 310° and 110°, from which ribbons and draperies hung, coloured red, mauve, green, white and yellow. The whole arc pulsated throughout the period of this observation, the vertical rays being particularly brilliant. Each end of the arc was formed by vertical red rays which constantly lost and regained brilliancy. At 0500 the centre of the arc began to fade leaving only a faint curtain effect. At 0530 the whole had disappeared and only a faint suspicion of light remained of the original arc.

Position of ship: 48° 18′N., 123° 48′W.

## Australian waters

M.V. *Australia Star.* Captain J. A. Hoppé. Observer, Mr. J. Howartson, 4th Officer.

Whilst on passage from Melbourne to Fremantle, aurora was seen on two occasions. The first display on 2nd September, 1957, had a fan-shaped structure of white rays superimposed upon a diffused pulsating pink glow, and lasted from 1230 to 1330 G.M.T.

Position of ship at noon: 36° 48′S., 127° 06′E.

The next display was from 1330 to 1630 G.M.T. on 3rd September. There were no white rays but there was a glow which appeared to be a much deeper red than on the previous night, and was more uniform. On both occasions the area covered by the display was the same, bearing between 160° and 190°, the altitude of the glow being between 10° and 15°. There was no change of brilliance during the three hours of observation.

Position of ship at noon: 35° 42′S., 120° 06′E.

A third display was seen on 13th September whilst on passage from Fremantle

to Aden. It was seen as a soft pinkish glow and it disappeared for some considerable time before reappearing. The altitude was 10° to 15° but its bearing was now between 175° and 190°. The ship was then in approximate position 27° 42′S., 103° 36′E.

On none of the occasions were the boundaries of the glow well defined.

### METEOR

#### Off Cape Villano

M.V. *British Endeavour*. Captain G. P. Barton. Port Said to Swansea. Observer, Mr. S. E. Pollock, 2nd Officer.

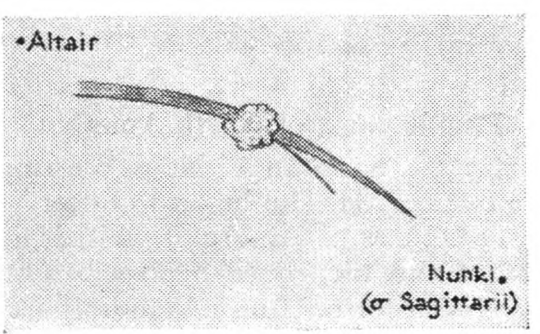
30th July, 1957, 0200 G.M.T. Bearing 020°, a very bright meteor came tumbling out from between the stars at an altitude of approximately 80°, its magnitude being not less than twice that of Venus. It disappeared at an altitude of about 10° without any noticeable change of bearing. The time of descent was about 9½ sec, mentally noted, and this, to the observer, seemed incredibly slow.

Position of ship: 43° 17′N., 09° 41′W.

#### North Atlantic Ocean

S.S. *Tasmania Star*. Captain G. C. Goudie. Auckland to Panama. Observer, Mr. P. G. Entwistle, 3rd Officer.

30th July, 1957. At 0458 G.M.T. a meteor of brilliance comparable to Venus was




observed for 2½–3 sec. It appeared at a point below Altair and followed an arc to near Nunki, leaving a white trail. About half-way along the track there was an explosion, the flash being about three times as bright as Venus. The meteor now travelled in two parts, the larger piece following the same line as before, while the smaller fragment shot down at a slight angle to the original track, disappearing almost instantly.

Position of ship: 20° 02′N., 61° 11′W.

#### Indian Ocean

S.S. *Jason*. Captain D. W. Stroud. Aden to Albany.

25th July, 1957. At 1300 G.M.T. a white meteor of exceptional brilliance was seen bearing 128°, altitude 25°. It moved to a bearing of 160°, losing altitude, and exploded in a violent flash of white and yellow light, which lasted about 2 sec.

Position of ship: 28° 24′S., 105° 18′E.

## Ice Accumulation on Trawlers in the Barents Sea

By Arthur Lee
(Fisheries Laboratory, Lowestoft)

The problem of the icing-up of trawlers operating in northern waters has received much attention since the loss of the steam trawlers *Lorella* and *Roderigo* off the north coast of Iceland in January 1955. A Court of Inquiry found that these vessels sank after becoming unstable owing to the very heavy weight of ice that had accumulated on their superstructures in a severe storm. The relative importance

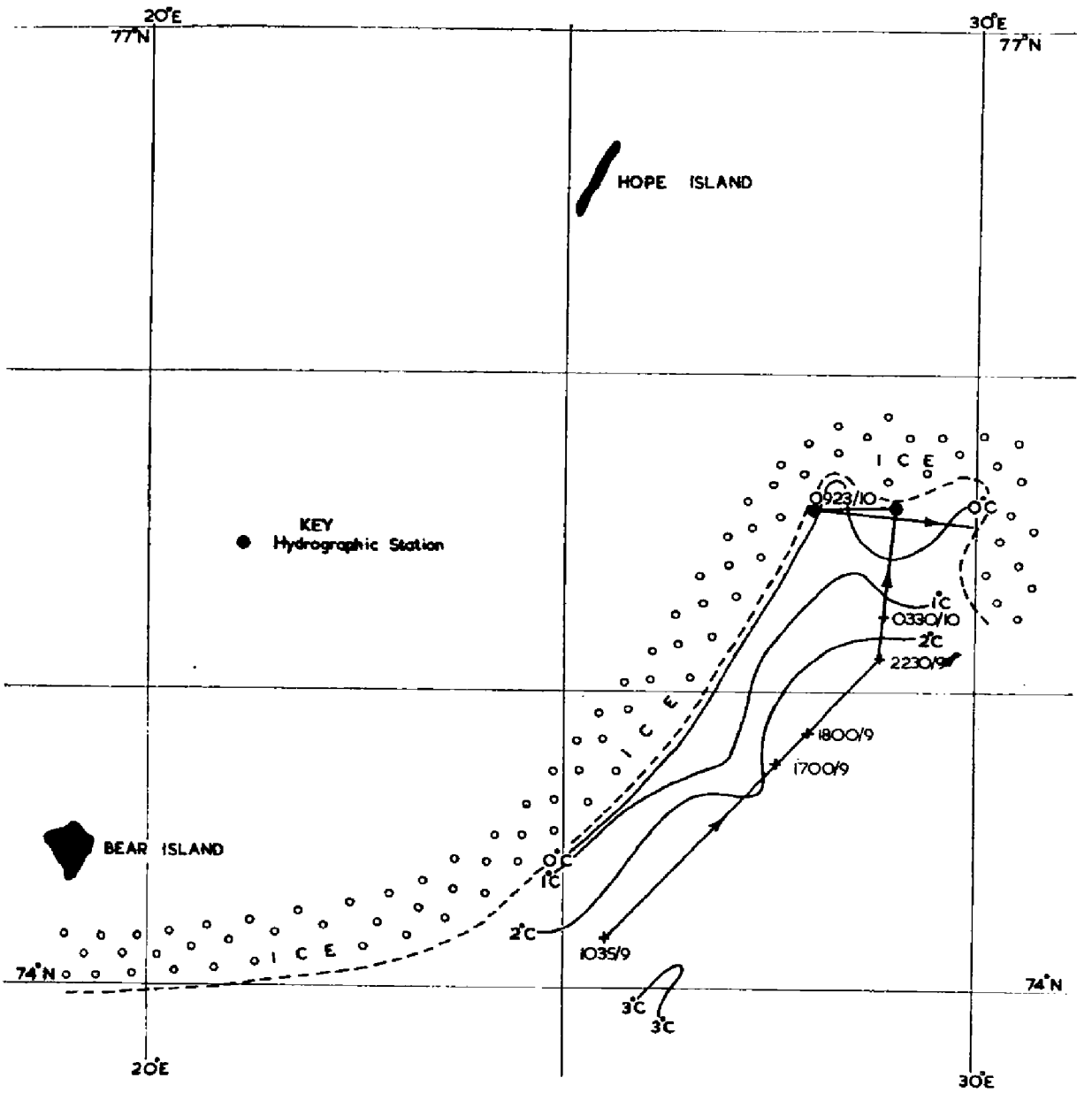
of the processes that could have caused icing-up in the case of these two ships has been assessed by Hay[1]. He found that the weights of ice that accumulated due to (*a*) snowfall and (*b*) the impact of supercooled fog droplets, including Arctic frost smoke (called " black frost " by fishermen), and supercooled droplets in drizzle or rain was small, 0·19 and 0·02 tons per hour respectively, but that the weight that accumulated due to the freezing of sea spray was large, 2 tons per hour. The important part in the icing-up of ships played by freezing spray has also been stressed by Van Praagh[2] who states that in a headwind in the Barents Sea ice built up at the rate of 1½ inches per hour on the Murmansk convoys in the 1939–45 war. He also points out the added danger when the wind is on the beam so that ice is formed on that side of the ship and thus causes a serious list. More recently the British Shipbuilding Research Association[3] has described the results of tests carried out with a model trawler in a tank in a climatic chamber. These tests were concerned mainly with the effect of freezing spray, but the so-called " black frost " condition was simulated on several occasions. Although the ice formed at these times completely coated the ship in a short space of time, the weight of ice deposited in this way was not thought to be very great. It was also considered that this condition was usually met with in calm weather so that the ice could be removed mechanically.

On 9th to 10th March, 1953, the research vessel *Ernest Holt* underwent severe icing-up in the Barents Sea. As a certain amount of meteorological data is available concerning the conditions prevailing at the time, it has been thought worth while to examine the causes of icing in this case. Photographs of the ship when the ice was at its heaviest are shown opposite page 140. The ice on the trawl winch and deck fittings was at least 4 inches thick and the ship's side was coated with ice which was about 12 inches thick at the level of the rail.

The icing occurred when the *Ernest Holt* was steaming towards Hope Island from Bear Island along the track shown in Fig. 1. The limit of sea ice as observed by the *Ernest Holt* on this cruise is also shown, together with the sea-surface isotherms based on thermograph records obtained during the cruise. At 1035 hours G.M.T., 9th March, the ship was in position 74° 10′N., 25° 30′E., and steaming 042° at 8 knots along a track parallel to the ice-edge, and 20 miles from it. The wind was 350° to 020°, force 5 (Beaufort), until 0330 hours, 10th March. There were occasional snow showers before 1600 hours and the air temperature was low. No temperature observations were made at the ship but data obtained from the Norsk Meteorologisk Årbok for 1953 show that at 1800 hours the air temperature was 13°F at Bear Island and −11°F at Hope Island. Under these conditions the ship was becoming iced up owing to the freezing of spray that came aboard with the sea on the port bow, but the rate of icing was not great, and although no actual measurements were made, it is probable that no more than 20 per cent of the final weight accumulated before 1600 hours. At 1700 hours the ship was in thick Arctic frost smoke and the visibility was poor, so that speed was reduced to 4 knots at 1800 hours and to 1½ knots at 2230 hours, when course was changed to 008°, but the frost smoke became less dense after 0330 hours, 10th March, and speed was increased to 9 knots. The decrease in frost smoke was probably due to the fact that at this time the wind moderated to force 2, but nevertheless smoke occurred below bridge level right up to 1100 hours when the photographs opposite pages 140 and 141 were taken. An attempt was made to take the air temperature at the ship at 0600 hours but it was below 14°F, the lower limit of the thermometer scale.* The temperature at Hope Island was −6°F at 0600 hours and 2°F at 1200 hours.

The majority of the ice seems to have accumulated on deck during the time the ship was in the frost smoke. The amount of ice that was caused by sea spray at this time was small as the ship's speed was 4 knots or less on account of the poor

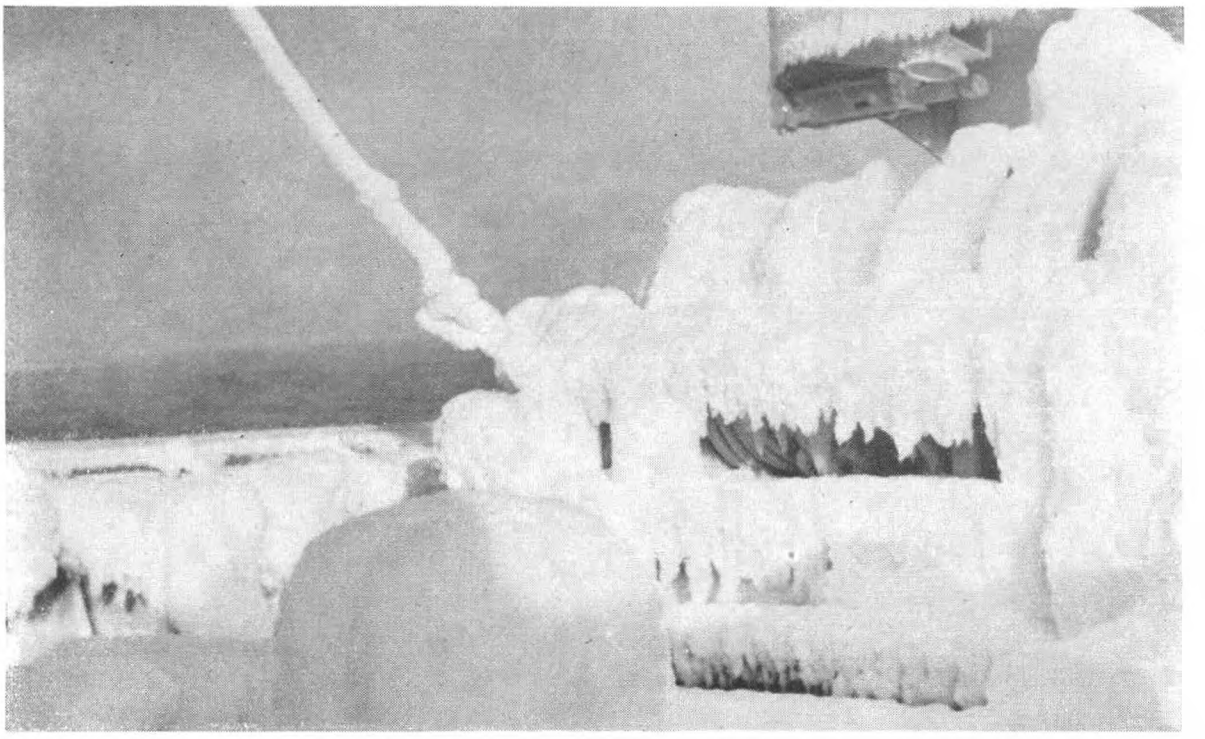
**Ernest Holt* was not a voluntary observing ship at the time and therefore did not have Meteorological Office thermometers aboard; those loaned to ships have a range from −20°F to 110°F.—*Editor.*



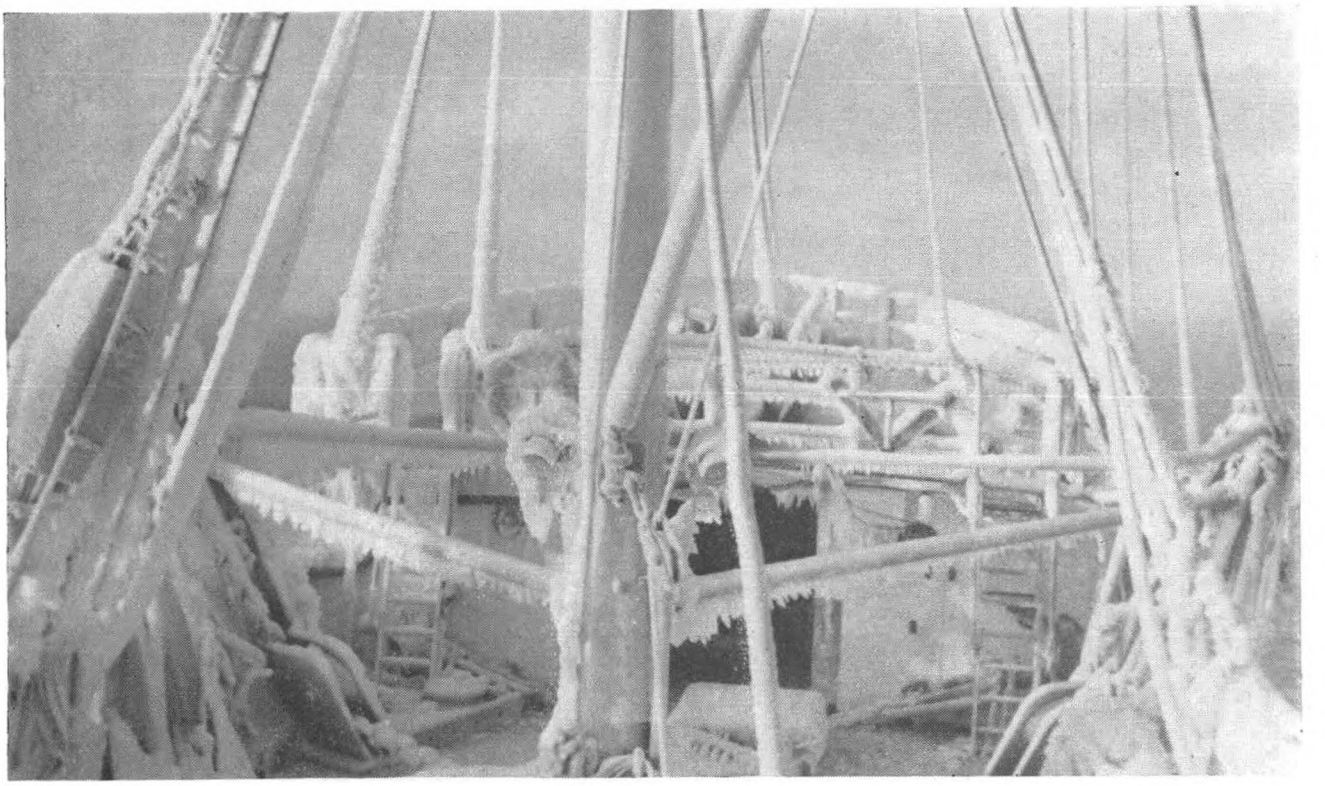

Track of the *Ernest Holt*, and sea-surface temperature, 9th-10th March, 1953.

visibility. Ice accretion can take different forms and these have been described for aircraft by Simpson.[4] Supercooled drops of water can exist for an indefinite time in an atmosphere many degrees below the freezing point but they cannot survive being broken up without the formation of ice. However, owing to the fact that when water turns into ice it releases a relatively large amount of heat which becomes available for raising its temperature, only 1/144th part of a supercooled water drop will freeze for each degree Fahrenheit that its temperature is below the freezing point. When the air temperature is low and the drops are small, the amount of liquid from each drop that is unfrozen when the drop is broken on impact will be so small that it cannot spread and it too will immediately freeze where the drop strikes, provided that the material on which it lands is at the temperature of the air. The particles so formed remain as individuals, a large amount of air is imprisoned between them, and a white opaque rime results. This type of ice accretion takes place in Arctic frost smoke and the majority of the ice shown on opposite page is seen to be of this form. On the other hand, when the temperature is relatively high, the amount of water which remains unfrozen on impact is large and tends to spread. If the drops are abundant and large the water from neighbouring drops unites and a translucent coating of ice which has a glassy surface appearance results. This is

(*Opposite page* 140)



Photographs taken aboard the research vessel *Ernest Holt* on 10th March, 1953, showing the main winch (above) and whaleback (below) (see pages 139-141).



(*Opposite page* 141)

Foredeck of the research vessel *Ernest Holt* on 1st February, 1956 (see pages 139 and 141).

Christmas mail-drop to O.W.S. *Weather Recorder* (see page 151).
*By kind permission of the Editor of 'The Belfast Telegraph'.*

known as glaze ice and it is formed when spray coming over the bows freezes; an example is shown on opposite page. This was taken aboard the *Ernest Holt* on 1st February, 1956, in the North Sea. Most of this ice had accumulated on the previous day. At 0925 hours the ice was between ¼ and ½ inch thick and by 1800 hours it had accumulated to a thickness between 1½ and 3 inches. The wind was 170°, 30 knots, becoming 140°, 28 knots, and the ship was steaming with the wind on the port bow on a course of 195° at 9 knots. Wave height was estimated as 20 feet and spray was breaking right over the bridge structure: as the air temperature was 19°F, with the sea temperature 44°F, glaze ice was formed. In the photograph many icicles can be seen. These also appear in the photographs opposite page 140; where they are due to the freezing of spray before the ship encountered the dense Arctic frost smoke.

The relationship between visibility and the liquid water content in fogs and clouds has been examined by Houghton and Radford.[5] No exact estimate of the horizontal visibility could be made when the *Ernest Holt* was in the dense frost smoke as it was dark and the wheelhouse windows were continually becoming coated with rime. They could only be cleared by the application of hot water on the inside. If we take the visibility as being 200 yards the liquid water content of the air would be 0·2 gm/m³. Taking the wind speed relative to the ship as 20 knots, and assuming that all the water in the air passing the ship became ice, then the thickness of the ice deposited during the period the *Ernest Holt* was in the dense frost smoke would be about 3 inches, if no air was imprisoned in the ice. This figure agrees well with the thickness observed, but it must be borne in mind that the visibility was probably underestimated, that no account has been taken of the amount of imprisoned air, and that all the water in the air would not be deposited as ice as many of the droplets would flow past the ship. If we take the area of the ship's side and superstructure on which the ice accumulated as 4,000 square feet, then the weight of ice that accreted thereon in the dense frost smoke is calculated as 26 tons and the rate of accretion as about 2½ tons per hour, that is a higher figure than that of Hay quoted at the beginning of this article for frozen spray.

Frost smoke is usually regarded as being a shallow fog, but Jacobs[6] has shown that in the Gulf of St. Lawrence it can be dense and deep, rising to heights of 5,000 feet when there is much open sea and 2,500 feet when there is more sea ice. He states that aircraft pilots have reported visibility well below 1,000 yards when flying in the smoke and that, although there are no records of the surface visibility at sea, it is known that the smoke once reduced visibility to 1,000 yards at a station 10 miles inland from the gulf. Jacobs finds that when this type of frost smoke is formed, fresh or strong gusty winds are always present and that the temperature difference between sea and air is at least 16°F. There are no records of such deep and dense frost smoke forming in the Barents Sea, but the icing experienced by the *Ernest Holt* took place in conditions similar to those described by Jacobs. The ship was in a bight in the ice-edge as it runs from east to west across the Barents Sea in March. This bight is caused by the northernmost branch of the current of Atlantic origin that enters the Barents Sea between Norway and Bear Island. The wind was fresh and gusty and, although no air temperature was taken at the ship when the frost smoke was first encountered, the air temperatures at Bear Island and Hope Island were 13°F or less while the sea temperature at the ship was 36°F. These conditions are common in the Barents Sea in winter and this particular instance shows that dense Arctic frost smoke is a source of danger, particularly to fishing vessels working near the ice-edge.

The rate of accretion found above is twice that found by Hay (loc. cit.) for accretion due to spray in the case of the *Lorella* and *Roderigo*, but this does not necessarily mean that the frost smoke factor is a greater source of danger than the spray factor, as much of the ice that accumulated on the *Ernest Holt* was on the deck and sides of the ship and would not have so great a moment as ice on the rigging and upperworks such as occurs when spray freezes. Hay assumed that

10 per cent of the spray froze on striking the ship and that each wave threw up 100 pounds of spray with the wave period 8·7 seconds. There is virtually no knowledge as to the rate at which spray strikes the exposed surfaces of a ship or of the percentage that freezes. Mr. D. J. Ellett of this laboratory has recently designed a gauge which measures the amount of spray falling on a plate with an area of 1/16 square metre held in the vertical position. It is also possible to determine the amount of ice that forms on the plate and hence the percentage of spray that freezes. Observations made so far show that the spray can amount to 1·4 pounds per square foot per hour with the ship dodging in a wind of 40 knots, the wave height being 16 feet and the sea 20° on the starboard bow. If this is the average amount of spray striking the superstructure and rigging, and the area of the superstructure, rails, winches, rigging, etc., exposed to spray is taken as 1,000 square feet, then about 1,400 pounds of spray will strike the upperworks in an hour. This rate will increase rapidly once ice begins to form on the upperworks and so increase the area exposed to spray. No data have as yet been collected showing what percentage of the spray freezes. Until this has been done and the rate of spraying determined in a number of conditions, further analysis of the effect of spraying cannot be undertaken.

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# Whales Observed in the Atlantic Ocean

## NOTES ON THEIR DISTRIBUTION

## PART I*


By S. G. BROWN
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This is the second paper in what is hoped will be a series resulting from the collection of records of whales observed at sea by merchant ships and other vessels, and reported to the National Institute of Oceanography under a scheme started in 1952. The first paper[1] included references to the earlier publications connected with the scheme and gave an account of the method of working up and interpreting the records. The main object is to obtain new information on the world distribution of the larger whales especially, but also of the smaller cetacea such as the dolphins and porpoises.

### Data

The boundaries of the Atlantic Ocean as considered in this paper can be seen in Fig. 1; it extends from 60°N. to 50°S. A few observations have been received from voyages north of 60°N., but the mileage steamed here is very small and it seems best to omit these records from the present paper†. The North Sea is included (see below) but not the Baltic. Observations made in the Mediterranean have not been

* Part II of this paper will appear in the next number of *The Marine Observer*.

†A number of reports have been received from ocean weather ships and aircraft, some of which refer to this region, and these will be considered in a separate paper to be published elsewhere.

used. It is hoped to combine them with a study of those from the Red Sea at a later date. In the South Atlantic Ocean the eastern boundary is at 20°E.; this was taken as the western boundary of the Indian Ocean records.

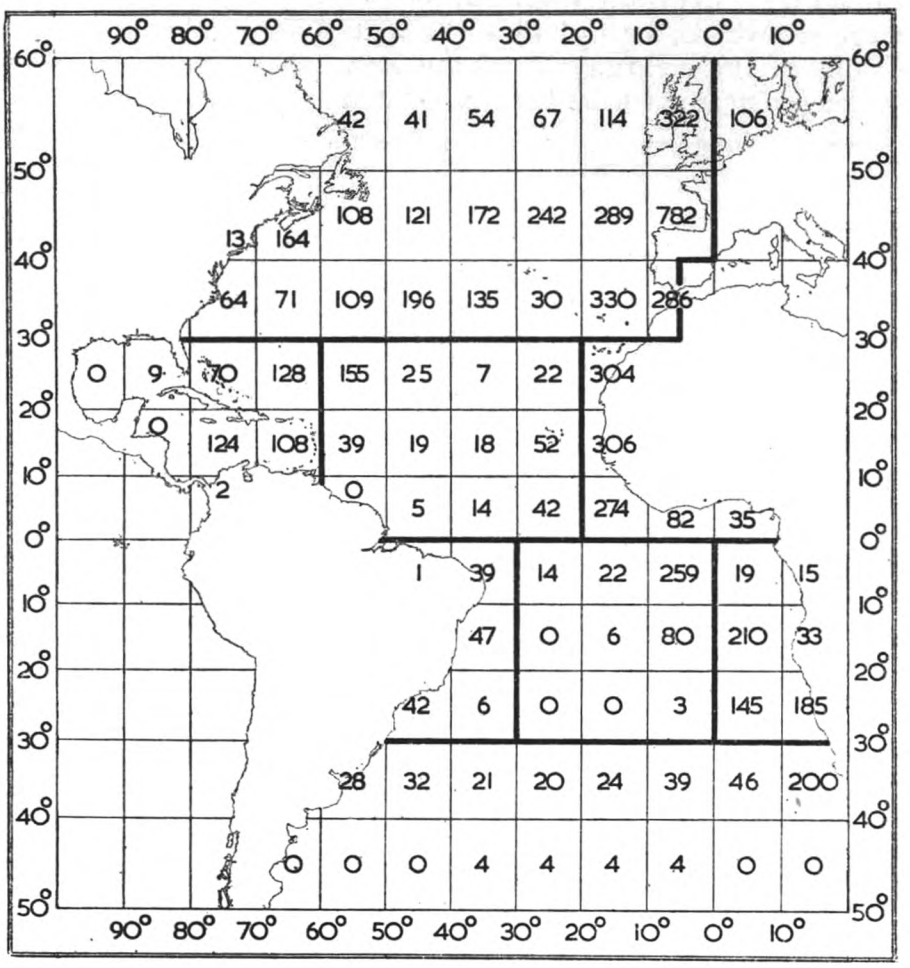


Fig. 1. Chart showing the boundaries of the Atlantic Ocean, the division into areas and the total mileage steamed in each 10° " square " (in hundreds of miles).

A total of 286 reports from the Atlantic Ocean as outlined had been received by the end of December, 1956. Most of them contain a number of whale observations and many cover more than one voyage. 157 of them give sufficient details for the approximate ship's route to be plotted and the ships concerned apparently kept a fairly regular watch for whales. The remaining 129 reports, conveniently referred to as *M* reports, include 67 which are extracts from logbooks forwarded by the Meteorological Office. They have been used to augment the conclusions reached by the plotting of observations from the reports for which the mileages steamed in different areas have been calculated.

The observations include 189 sightings of large whales. As explained in the previous paper, this includes sperm whales, humpback whales and rorquals (i.e. blue, fin and sei whales). Again it is found convenient to treat the observations in five categories: sperm whales, humpback whales, rorquals, "large whales" (unidentified) and total whales. As in the case of the Indian Ocean reports, there are many records of dolphins and small whales. It is hoped to examine their distribution in a future paper.

**Total whales**

An examination of the mileage figures (Fig. 1) shows that a much greater distance has been steamed in the North Atlantic Ocean (569,800 miles) than in the South Atlantic Ocean (155,200 miles). North of the equator, the areas on the shipping routes from Europe to Canada, the United States and the Panama Canal, and

between the United Kingdom and the Mediterranean and South Africa, show the most coverage. There is little in the central southern part of the North Atlantic Ocean and almost none in the Gulf of Mexico. South of the equator the greatest mileage steamed is on the route from Europe to South Africa. There has not been much coverage elsewhere, least of all in the central area and south of 40°s.

The positions of the sightings of all the large whales made by the vessels for which the mileages steamed have been calculated are shown in Fig. 2. Of the 140

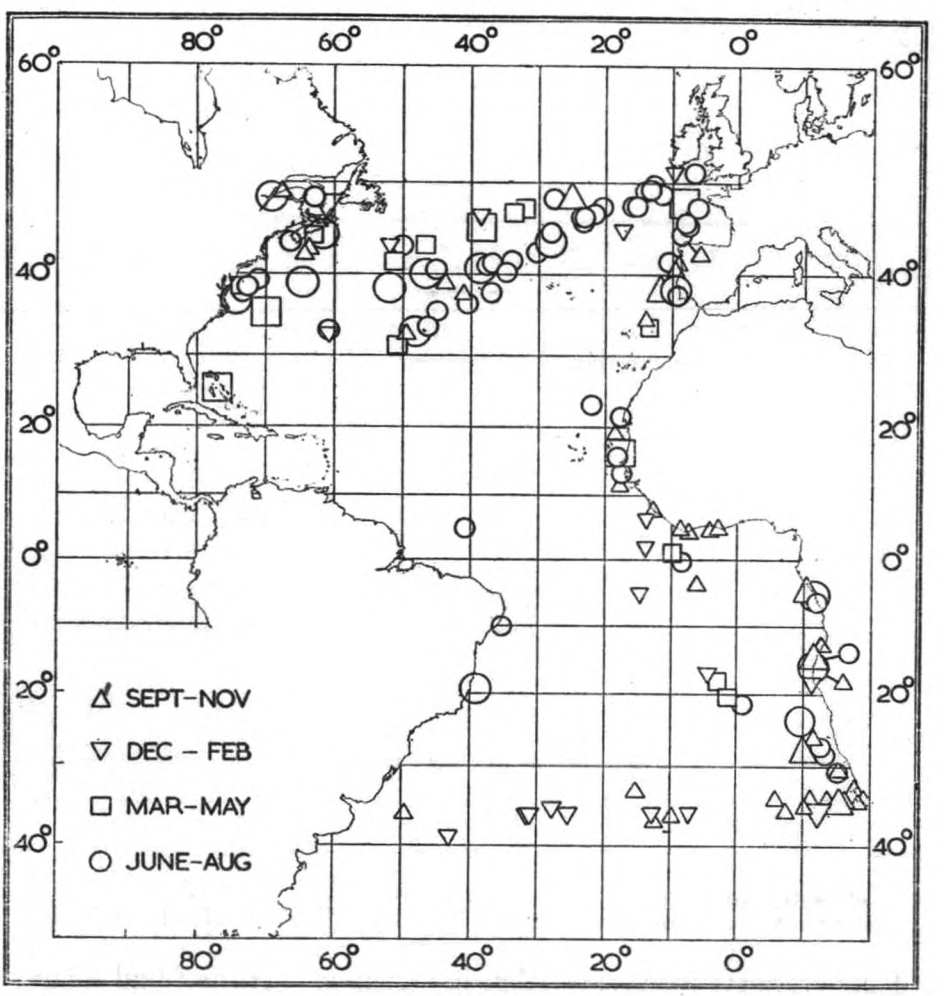


Fig. 2. The distribution of sightings of all large whales from reports for which mileage steamed is calculated. (Small symbols denote 1–4 whales, large symbols denote 5 or more whales).

sightings plotted, 98 (70 per cent) were of one or two whales only. There are 28 records of five or more whales seen at one sighting and these are indicated on the chart by the larger symbols. Five of these records (3 rorqual, 1 sperm whale and 1 " large whale " sightings) refer to 20 or more animals seen at one time. The approximate numbers of the different species seen were:

| | Rorqual | Sperm | Humpback | " Large whales " | Total |
|---|---|---|---|---|---|
| Sightings .. .. .. | 45 | 43 | 11 | 41 | 140 |
| Number of whales (approx.) | 223 | 148 | 22 | 129 | 522 |

In the Indian Ocean the ratio of total sightings to total number of whales was 103 to 263.

The chart shows that the sightings are concentrated, for the most part, on the busiest shipping routes, as is to be expected. More observations are needed before we can plot for each 10 degree " square " the number of whales of each species per 1,000 miles steaming, to give a reliable comparison between the numbers in each " square ". It is possible, however, to check the areas in which all large whales appear to be concentrated or scarce, if the number of sightings and the approximate

numbers of whales seen, of all species per 1,000 miles steaming in different areas, is calculated.

We can compare first the North and South Atlantic Oceans. There are 0·16 sightings per 1,000 miles (0·66 whales per 1,000 miles) in the North Atlantic Ocean, compared with 0·30 sightings per 1,000 miles (0·93 whales per 1,000 miles) in the South Atlantic Ocean. These figures suggest that there are rather more large whales in the South Atlantic Ocean, but since the number of observations is limited and rather unevenly distributed, the difference between the two figures may be due to chance. There is certainly no evidence of any great difference in the overall " density " of the populations.

Next, the Atlantic Ocean as a whole may be conveniently divided into eight areas, the boundaries of which are outlined in Fig. 1. These are:

North Atlantic

1. The zone between Europe and North America from 30°N. to 60°N., omitting the North Sea.*
2. The African coastal waters, between 30°N. and the equator and east of 20°W.
3. The central North Atlantic Ocean, between 30°N. and the equator, and from 20°W. westwards to 60°W.
4. The Caribbean area, south of 30°N. and west of 60°W.

South Atlantic

5. The African waters, between the equator and 30°S. and east of the Greenwich meridian.
6. The central South Atlantic Ocean, between the equator and 30°S., and from 0° westward to 30°W.
7. The South American waters, west of 30°W., between the equator and 30°S.
8. The zone between South Africa and South America from 30°S. to 50°S.

The total distances steamed, the sightings of all species, and the approximate number of whales seen for the whole year in these eight areas are given in Table 1.

**Table 1. Sightings and numbers of all large whales in different areas of the Atlantic Ocean**

| | Miles steamed | No. of sightings | Sightings/ 1,000 miles | No. of whales | Whales/ 1,000 miles |
|---|---|---|---|---|---|
| North Atlantic Ocean: | | | | | |
| Europe–North America .. | 375,200 | 76 | 0·20 | 298 | 0·79 |
| African coastal waters .. | 100,100 | 14 | 0·14 | 71 | 0·71 |
| Central North Atlantic .. | 39,800 | 2 | 0·05 | 2 | 0·05 |
| Caribbean .. .. .. | 44,100 | 1 | 0·02 | 7 | 0·16 |
| South Atlantic Ocean: | | | | | |
| African waters .. .. | 60,700 | 15 | 0·25 | 57 | 0·94 |
| Central South Atlantic .. | 38,400 | 6 | 0·16 | 8 | 0·21 |
| South American waters .. | 13,500 | 2 | 0·15 | 6 | 0·44 |
| South Africa–South America | 42,600 | 24 | 0·56 | 73 | 1·71 |

This suggests that the highest concentration of whales occurs in area 8, and that there are rather smaller numbers of whales in areas 1, 2 and 5. In the central areas of both the North and South Atlantic very few whales were sighted, but some parts of these areas have not been covered, or barely so, so that the figures in the table for these two areas are less reliable. This also applies to the Caribbean area where the Gulf of Mexico has been hardly sampled and only a small distance has been steamed in South American waters. As mentioned in the paper on the whales observed in the Indian Ocean, it seems likely that the observations in coastal areas are not as reliable as those in the open ocean, because of the tendency of some species, e.g. humpback whales, to keep close to the coast inside shipping routes. It is possible therefore, that there may be more whales present in the coastal areas than is indicated by the figures in the table.

The number of whales seen per 1,000 miles steaming in certain areas of the

* The 10,600 miles steamed in the " North Sea " is in fact almost all in the English Channel, and the approaches to London and other ports in the southern North Sea.

Atlantic may be compared with areas in the Indian Ocean (Table 2). In the central

**Table 2. Numbers of whales seen in different areas of the Atlantic and Indian Oceans**

| | Miles steamed | Whales/ 1,000 miles |
|---|---|---|
| Indian Ocean: | | |
| Central area .. .. .. | 67,500 | 0·07 |
| Africa–Australia .. .. | 89,700 | 0·96 |
| South Atlantic Ocean: | | |
| Central area .. .. .. | 38,400 | 0·21 |
| South Africa–South America | 42,600 | 1·71 |
| North Atlantic Ocean: | | |
| Central area .. .. .. | 39,800 | 0·05 |
| Europe–North America . .. | 375,200 | 0·79 |

Indian Ocean 0·07 whales per 1,000 miles compare with 0·21 whales per 1,000 miles in the central South Atlantic and 0·05 whales per 1,000 miles in the central North Atlantic. The figures for the temperate zones between the continents are 0·96 whales per 1,000 miles for the Indian Ocean, and 1·71 and 0·79 whales per 1,000 miles for the South and North Atlantic respectively.

It is significant that the figures for the density of whales in the three central areas are all of the same order of magnitude and this applies also in the case of the three temperate zones. This suggests that the average degree of vigilance in the reporting vessels as a whole is fairly constant, and that large differences in the densities of the whale populations of some areas are probably real ones, always remembering the amount of coverage of the areas concerned.

As in the Indian Ocean, the overall density of the whale populations in the Atlantic may be compared with the density in the Antarctic as observed during voyages of the *Discovery II*.[1] In the Atlantic Ocean sector of the Antarctic, *Discovery II* showed that the density of the whale populations varied from about 57 whales per 1,000 miles steamed in summer to about 11 whales per 1,000 miles in winter. The corresponding figures (for the baleen and " large " whales only, omitting sperm whales) for the North Atlantic Ocean are 0·51 and 0·13 whales per 1,000 miles, and for the South Atlantic 0·44 and 0·53 whales per 1,000 miles respectively. If we assume that half of the total distance steamed in the Atlantic Ocean was in darkness or poor visibility, and that only one-third of the whales which would have been sighted from *Discovery II* (with the special lookout) were sighted by the reporting vessels, the density of the populations of whales in the Atlantic Antarctic sector is approximately 20 times as great as that in the South and North Atlantic Oceans in the summer months, and from 3 to 14 times as great in the winter months.

The corresponding figures for the density of the populations in the Indian Ocean Antarctic sector are approximately 47 times as great in the summer months, and from 6 to 11 times as great in the winter months, as in the South and North Indian Oceans. Thus the differences between the figures for the summer and winter months are of the same order in both the Atlantic and Indian Oceans.

As was pointed out in the earlier article, there are good reasons for believing that most of the baleen whales are absent from the Antarctic in the winter months, and it seems curious at first, therefore, that the density of the Antarctic population in the Atlantic sector in winter is greater than that of the population in the South Atlantic Ocean, into which these whales are believed to migrate. In winter, however, the area of open water in this sector of the Antarctic is only about one-seventh of that of the South Atlantic Ocean, and the whales in the latter may therefore be distributed over a very much greater area of ocean.

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# The Contribution of Observers in Ships to Auroral Research during the International Geophysical Year

By J. PATON, M.A., B.SC., F.R.S.E.
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All auroral observations made over the Atlantic, Europe and Africa are collected at the Balfour Stewart Auroral Laboratory of Edinburgh University, which serves as World Data Centre *C* during the International Geophysical Year. Observations made over Asia go to World Data Centre *B*, in the U.S.S.R., and over America to World Data Centre *A*, in the U.S.A.

The purpose of this note is to acquaint observers in ships with the way in which we use their observations and with the progress of our work.

## The reduction and analysis of auroral observations

As the observations come in they are arranged in groups according to the geographical region where they were made. For example, all observations made in the sector extending from North Greenland across Iceland to the British Isles, France and eastern Spain to the western Mediterranean are collected and arranged in order of latitude from north to south. Each sector lies along a line of geomagnetic longitude and so extends in a direction magnetic north to south. The reason for this is that auroral displays tend to be symmetrically distributed with respect to the earth's magnetic poles, not the geographic poles. The sector delineated above is contained within the lines of geomagnetic longitude 75° and 85°E. and is referred to as sector 80, since its mean geomagnetic longitude is 80°.

When all the observations from one sector have been collected and arranged, we commence to plot them on a chart, which when completed, shows at a glance the auroral forms which have occurred, with their brightness and position in the sky during the course of each night. Using the information plotted on the chart, we can then ascertain the geographical positions of the various auroral forms (provided the available information is sufficient) and can prepare an account of each display as in the following example.

1957, 6–7th November. Sector 80.

| G.M.T. | |
|---|---|
| 1930 | An arc, HA2, tinged with red, appeared overhead in geomagnetic latitude 63° (Shetland). While it remained in this position, the luminosity extended slowly to a great height. |
| 1950 | The light was visible in latitude 56° (Midlands) as a red glow extending up to 25° above the N. horizon. |
| 2000 | The red glow above the arc over the Shetlands is now visible on the N. horizon as far south as latitude 54° (the Channel coast). |
| 2010 | A second reddish arc, HA1, appears overhead in latitude 61°. |
| 2021 | Bundle of red rays, R2, develops in the NW. portion of the northern arc and changes to red diffuse surfaces, DS2, still visible as far south as latitude 54°. |

And so on.

This detailed information of each display will be of very great value when we later examine the relations between the aurora and events in the sun and accompanying disturbances in the ionosphere (affecting radio transmission) and the earth's magnetic field (sometimes causing changes of 2–3° in the magnetic variation). This is the first time that detailed information of this kind has become available and, of course, it has been made possible only by the co-operation of our large team of observers on land and in ships and aeroplanes.

## The special importance of observations made at sea

Unfortunately, so far, it has been possible to make this analysis in full detail only for Sector 80, which extends across well-populated land areas, where there exists a close network of observers. It is quite impossible to arrange the same uniform network over the ocean, where observers are concentrated in the sea and

air traffic lanes. However, thanks to the work of observers in ships and in trans-atlantic aircraft, we have been able to get a general, if not detailed, picture of most auroral displays. But as the number of accurate sea and air observations increases it is becoming possible to fill in the detail that we require.

As we have stressed before, negative observations recording the absence of aurora are almost as important to us in preparing our charts as are reports of an actual display; so we would be very grateful if observers would report sky conditions on *every* night. (We enter areas of cloud on our charts, too.)

When a display is in progress, detailed observations, accurately timed to the nearest minute, are of the utmost value to us, especially if they come from a ship at sea, in which case they are quite likely to be the only information we are receiving from that part of the ocean. We would like, therefore, to take this opportunity of impressing on our marine observers the great importance of any observations they may make and to convey our sincere thanks to them for the quite invaluable assistance that they are already giving to us in our research.

**Aurora during the International Geophysical Year**

The I.G.Y. was arranged to be held in 1957–58 for the reason that sunspot activity, and the terrestrial events that occur in association with it, were then expected to be at a maximum. The choice could not have been better; sunspot activity during the autumn of 1957 was the greatest ever recorded since sunspot records first began to be kept over 200 years ago. It was almost uncanny to look into the sky at midnight on 30th June, when the I.G.Y. was to begin, and to see aurora playing overhead. We have never before observed aurora in the bright twilight that lasts all night in June in Scotland. And on the night of 1st–2nd July the rare noctilucent clouds, thought to consist of meteoric dust at a height of 50 miles, appeared along our northern horizon. It appeared that Nature had decided to co-operate in our terrestrial studies by providing us with the required phenomena!

Since then, aurora has been seen quite often in low latitudes, notably on the nights of 29th–30th September, 1957, and 10th–11th February, 1958, and we expect many more such active displays to occur before the I.G.Y. ends on 31st December, 1958.

**Continuation of auroral observation after the I.G.Y. and the need for more observers in ships**

When we initiated the Aurora Survey in 1952, it was our intention to record auroral occurrences as fully as possible over the period of one sunspot cycle, i.e. for 11 years. We trust therefore that our observers will continue after the end of the I.G.Y. to assist us in this work, the first results of which are so promising and encouraging. Indeed, it is our hope that this note may persuade more observers in ships to undertake the observation of aurora and so to assist us in unravelling some of the many unsolved questions that this fascinating phenomenon presents. It is our impression, judging from the reports that come to us, that the regular observation of aurora is a continuing source of interest and pleasure to observers; there are certainly few natural phenomena possessing the beauty displayed by a great aurora.

Instructions for making observations, including illustrations and descriptions of the various auroral forms, are being issued as an amendment to the *Marine Observer's Handbook*.

All observers are cordially invited to visit the Balfour Stewart Auroral Laboratory when they may be in Edinburgh.

## COMET MRKOS, 1957d

As stated on page 94 of the April 1958 issue of this journal, two bright naked-eye comets were seen in 1957, both of which were observable in the northern hemisphere. The discovery of the second one was announced by Antonin Mrkos on 2nd August,

in Czechoslovakia, the brightness in the early morning sky being estimated as third magnitude. His name was retained for the comet, but it was subsequently learned that several other persons had seen it previously, the earliest date being 29th July. It was also independently found before dawn by an English schoolboy, Cyril Hare, on 3rd August, when it was about the first magnitude. Within a few days the comet was seen well in the evening twilight, with a bright rather slender tail stretching upwards for 3° or more, with a slight curvature.

Most new comets are discovered when they are faint telescopic objects, weeks or months before they reach perihelion, the point on their orbit at which they are nearest to the sun, and about which time they develop their maximum brightness. Occasionally, however, as in the present instance, a comet is not seen until it has become bright, when it suddenly appears in the morning or evening twilight. This means that during the whole previous period of its approach towards the sun the comet's apparent place in the sky has been more or less in line with the sun, as seen from the earth, so that daylight or very bright twilight has prevented its discovery. When nearest the sun, the comet's movement in its orbit is most rapid and if its angular distance from the sun suddenly increases it "jumps" into visibility and it is then likely to be found independently by a number of people over an interval of a few days. This is what happened with Comet Mrkos, which reached perihelion on 1st August, 1957.

The comet was well observed by astronomers. From its brightest magnitude of about the first it gradually decreased to about 2·5 by the middle of August and then faded slowly to magnitude 4·0 on 30th August and about magnitude 5 on 4th September. By the end of September it was no longer visible to the naked eye, partly because of its diminished brightness and also because it was moving back into the twilight region. It will, no doubt, be picked up again telescopically by southern hemisphere observers in 1958 when its apparent angular distance from the sun again becomes sufficiently great to bring it into the dark sky.

The maximum length of the tail, as seen by the naked eye, was more than 5°. Photographs extended this to 9°. Early photographs showed two straight long rays stretching from the head of the comet in addition to the bright curved tail which was seen visually. Remarkable changes took place in the bright tail on the nights of 21st and 22nd August; as revealed by photographs this tail was broken up into curved pieces and twisted waves, these iregularities being in rapid motion.

The comet was observed by 64 voluntary observing ships, which are listed below, the reports covering every day from 6th to 27th August inclusive, with the exception of 7th August. The earliest observations were those of S.S. *Empress of England* on 6th August and S.S. *Media* on 8th August. No sketches of the comet were made, except purely diagrammatic ones. More observations of the brightness of the comet and the length of its tail were made than were received for Comet Arend-Roland. Estimation of the length of the tail was made by 37 ships. The 29 ships which gave magnitude estimates are marked by an asterisk in the list: *Adelaide Star, Afric, Aureol, *Avistone, Beavercove, *Bellerophon, *British Patience, British Resource, British Splendour, *Calabar, *Cambridge, *Cape Clear, Cape Grafton, Cape Howe, *Ceramic, Chantala, *Cingalese Prince, *City of Johannesburg, *City of Liverpool, Clan Buchanan, *Clan Chattan, Clan MacBrayne, Devon, *Diomed, Empire Orwell, Empress of England, English Star, *Essex, *Explorer, *Factor, *Fort Avalon, Geelong Star, Glenorchy, *Imperial Toronto, *Ingleby, Kajang, Loch Gowan, Macharda, *Malancha, Manchester City, Media, *New York City, *Nova Scotia, Paparoa, Parima, Pilcomayo, *Potaro, Potosi, Prospector, Rangitane, Regent Royal, *Rialto, *River Afton, *Roscommon, Stanwear, Sydney Star, *Telemachus, Tetela, *Tyrone, Volvula, *Waitemata, *Warkworth, Windsor, Worcestershire.*

E. W. B.

## WEATHER MESSAGES FROM TRAWLERS

Though the Fleet List published in the January and July numbers of *The Marine Observer* has for many years contained the names of trawlers co-operating with the Meteorological Office, it is seldom that these ships reach our headlines. It is only when disaster overtakes them as in the case of *Lorella* and *Roderigo* (*The Marine Observer*, April 1956) that they receive anything approaching the publicity which is accorded to their larger brethren on the better known trade routes.

Trawlers, however, by the very nature of their voyages into little frequented waters and high latitudes, are in a position to render inestimable service to the Meteorological Office and to shipping by the regular transmission of weather reports from wherever they may be.

Our thanks are due to the 50 skippers named on page 174 of this issue, and to their wireless operators, who have undertaken to observe and report those elements of the weather which do not entail the use of any meteorological instruments, irrespective of the vessels in which they sail. Practical recognition was given to them last year by the extension of the Excellent Awards scheme to include two trawlers and in this, the second year of such extension, we congratulate Skipper S. Sparkes and wireless operator F. Scott of the *St. Apollo*, and Skipper C. Coultas and Mate A. Osborne of the *Sardinian* (which does not carry a wireless operator), on being nominated for awards.

All maritime countries are anxious to provide the most accurate weather forecasts possible in the sea areas for which they are responsible, but they cannot do this unless they have adequate reports from ships at sea in those areas. The practical use of trawlers' observations is shown by the fact that, thanks largely to them, the Canadian, Icelandic and Norwegian Meteorological Services are now able to give weather forecasts at least twice daily for the Arctic areas.

Since November 1957 we have circulated amongst the owners of observing trawlers and other fishing interests a monthly newsletter showing the number of observations received from individual trawlers and enumerating any interesting points connected with them. A study of these newsletters brings to light many instances of the uncomfortable nature of observing in these far distant waters. In November, for instance, of the 151 weather reports received from north of 60°N., 40 came from latitudes above 70°N. and 27 from as far as 74°N. Readers of *The Marine Observer* sailing in fine weather trades may well ponder on the difficulties of observing in such high northern latitudes in November.

December 1957 brought us 114 reports from the seas north of 60°N., one of which came from the Bear Island region and a number from as far distant as the Barents and Greenland Seas. In these regions observations from trawlers are especially valuable as these ships are practically the only source of weather information.

The number of observations received from trawlers shows a most encouraging increase month by month and March brought the satisfying total of 220 reports from between latitudes 60° and 74°N.

Though trawlers keep no written logbook for us, as it is well appreciated that they are normally too busy to do so, and do not carry our instruments, as it is recognised that a trawler's charthouse is already over-full with instruments connected with their calling, the use of their radio weather messages for forecasting is by no means the end. After their use in the Central Forecast Office the message slips themselves are sent to Harrow where they are prepared and transferred to Hollerith cards in the same manner as the observations of selected and supplementary ships.

Thus, to the store of meteorological data from the oceans built up on over 100 years of ships' observations, is being added a new and fast-growing wing dealing with the Arctic Ocean, and we look forward with confidence to the day when our knowledge of this ocean will be at least comparable with that of the more familiar trade routes.

This branch of our work has been materially assisted since March 1957 by the recruitment as a full selected ship of the Scottish Home Department's fishery research ship *Explorer*. Two meteorological logbooks have so far been received from this ship, giving us much valuable full information from as far north as 68°N. The ship figures in our short list of Excellent Awards on page 120.

L. B. P.

## USE OF RADAR IN HURRICANES

Mariners will no doubt be interested to read of the experiences of the master of R.M.S. *Ocean Monarch*, in steering his ship by radar so as to avoid dangerous seas in a hurricane. The following extract from his radar report is reproduced by kind permission of Messrs. Furness Withy & Co. and of the Radio Advisory Service.

> . . . the extreme sensitivity of the radar was remarkably useful to me during a hurricane-force gale of short duration which I was obliged to weather a few weeks ago. This was a severe dusting. The seas were very steep, and during the middle watch I was able to pick out the most dangerous seas when they were still 1½–2 miles away, and con my ship successfully in anticipation of their arrival. This I continued to do for a period of 3–4 hours at the height of the storm, reducing speed and adjusting direction of ship's head whenever anything particularly formidable appeared in the sea picture. Owing to the fine positioning of the radar displays in this ship, I was enabled to stand, or rather, hang on like grim death, with the senior officer of the watch and confer with him upon the respective threat of each sea as presented in the scope.

## INDIAN EXCELLENT AWARDS, 1956-57

We have been informed by the Director of the India Meteorological Department that Excellent Awards are being presented to six ships of their voluntary observing fleet for outstanding meteorological work during the year 1956–57.

The awards, which are in the form of books, are being sent to those captains, observing officers and radio officers who served for more than six months on the ships concerned during the award year. These officers are named in the list below.

| Name of Vessel | Captain | Observing Officer(s) | Radio Officer(s) | Company |
|---|---|---|---|---|
| *Rajula* . . . . | F. Mears | P. J. Mobley<br>R. M. Taylor<br>F. C. Welsh<br>C. F. Burnett | A. S. Higginbottom<br>P. M. Treharne | British India Steam Navigation Co., Ltd. |
| *Kampala* . . | C. L. Broadhurst | W. G. Hinder<br>A. A. R. Ross | L. H. Lewis | British India Steam Navigation Co., Ltd. |
| *Rizwani* . . | R. B. Weatherill | I. H. Glen<br>A. M. Osmany<br>P. Lynn | J. F. Cosgrove<br>B. V. Shinde | The Mogul Line, Ltd. |
| *State of Bombay* | N. N. Bhansali | B. S. Patwardhan<br>M. N. Tare<br>J. N. Kapoor | S. M. Villait | The Eastern Shipping Corporation |
| *Islami* . . . . | H. J. Palmer | M. S. H. Sufi<br>G. M. Peter | J. F. Gullen<br>T. L. Coutinho | The Mogul Line, Ltd. |
| *Bharatvijaya* . . | | V. K. Kumaran | O. P. Madhavan Nair | Bharat Line, Ltd. |

## MAIL DELIVERY BY AIR FOR THE WEATHER SHIPS

R.A.F. aircraft of Coastal Command regularly carry out air/sea rescue exercises (code word " Methop ") with British ocean weather ships on duty at ocean stations A, I, J and K. These exercises are usually carried out in daylight and occasionally at night-time, and while the aircraft is in the vicinity of the ship the opportunity is always taken to drop mails in a watertight floating container (see photograph opposite page 141).

The R.A.F. station from which the aircraft operates usually put newspapers and magazines in the container as well.

The customary form of the exercise is for the aircraft to " home " on the ship's non-directional M/F beacon and by radar, and to establish communication by H/F, M/F and V.H.F. When in the vicinity of the ship various evolutions are performed; the ship creates smoke and lays foam or special illuminating devices on the water to indicate a flare path and the aircraft flies low to simulate ditching. The ship lowers boats, makes all necessary preparations for the ditching and " rescues " survivors as well as taking on board the mails.

Each year these R.A.F. aircraft make special efforts in order to ensure a drop of Christmas mail. In December 1957 *Weather Recorder* and *Weather Watcher* were on duty at ocean stations J and I respectively, and their Christmas mail drop was made on 20th December. In addition to mails and newspapers, a Christmas tree and an iced Christmas cake were " dropped " successfully to each ship, a gesture which was much appreciated by all on board. In the case of *Weather Recorder* an urgently needed ball-race for the ship's radar was also dropped; very shortly afterwards the radar was in full operation again.

## The National Oceanographic Council—Annual Report

The Annual Report of this Council for the year 1st April, 1956, to 31st March, 1957, published by Cambridge University Press, price 5s., gives an interesting and detailed account of the work carried out by the National Institute of Oceanography during this period.

In the sphere of marine physics a study was made by Mr. Darbyshire of the decrease in height of swell which travelled 1,000 miles or more through areas of light winds, after leaving the storm area. The recordings used were made far from the disturbing effect of coasts and tidal streams and the conclusion reached was that the loss of height in smooth deep water is due almost entirely to the broadening of the wave fronts as they spread out in a fan-shaped beam. The height was found to decrease inversely as the square root of the distance from the storm centre. In rough weather, and with opposing winds, the attenuation might be very different.

The highest wave recorded during the year was one 60 feet high measured by the ocean weather ship *Weather Explorer* on 26th November, 1956, in 58° 13'N., 16° 30'W., with a wind force 10–11 on the Beaufort scale. R.R.S. *Discovery II* recorded waves over 50 feet on three days during the first fortnight of February 1957, while making very slow progress on a voyage from Falmouth to Bermuda.

Two more ship-borne wave recorders are being supplied to France, one for installation in the research ship *Calypso* and the other for a weather ship. A further ship-borne wave recorder was supplied to the United States and one has been installed in the Morecambe Bay Lightship in collaboration with Trinity House. Various other oceanographic instruments are being supplied, on appropriate terms, to organisations who will make good use of them and further the study of marine science.

Climatological maps based on the balance of incoming and outgoing radiation and heat exchange with the atmosphere, as determined from marine meteorological observations, are being studied in relation to the available information on surface and sub-surface temperatures and water movements, but the results so far are not very conclusive.

The R.R.S. *Discovery II* was in full commission throughout the year and in addition to carrying out a series of six-week research cruises in the North Atlantic, she was loaned to the Department of Geodesy and Geophysics at Cambridge University for bathymetric, seismic and magnetic work in the vicinity of the mid-Atlantic ridge, and was also chartered to the Admiralty for about three months. In company with the Woods Hole (Massachusetts) research ship *Atlantis* she did some deep current observations in the Gulf Stream.

# Old Time Marine Observers' Log

The meteorological logbook of the barque *John R. Worcester*, Captain Smith, received in the Marine Division on the 21st May, 1889, contained a cutting from the *Sydney Morning Herald* of 31st January, 1889, which read as follows, under the heading " The Current along this Coast ".

" December and January are months during which a current running to the southward is usually felt to be swifter than at any other time of the year. For some time past masters of vessels have mentioned the current as having been remarkably swift. Innumerable verbal reports to this effect have been made within the past two months. The other day Captain Jenkyns of the ship *Thermopylae* had experienced it to such a degree as caused him to lay special stress upon its unusual velocity. Recorded authorities on the subject have placed the maximum rate at about 2 knots; but the bulk of the testimony offered on the subject at this port lately has shown the existence of a southerly current running at as much as 3 knots and over. Captain Jenkyns estimated it as travelling at about 60 miles in the 24 hours. From whatever cause it arises, it is pretty clear that the current along the coast is more than ordinarily fast, even for this time of year. On this subject a rather strange report was given yesterday by the captain of the steamer *Samoa* and the captain of the barque *Presto*. Both of these masters declare positively that for the past two or three days the current has been northerly and not southerly at all. Such experience after a long continuance of strong southerly weather is said to be not altogether unheard of before. Instances are said to have been reported by mariners, and certainly both the shipmasters just referred to speak with absolute certainty upon the subject. The master of the German steamer *Samoa* says that on last Monday morning, when he was about 10 miles off the land, from 8 a.m. to noon he was carried to the northward about 6 miles in the four hours, and that from Monday last at noon to Tuesday at noon he went to leeward 18 miles, the vessel during that time being for the most part 40 miles off shore. He states that there could be no mistake about it, the northerly set being too perceptible to admit of doubt."

*Note.* In reading this extract we are carried back very realistically nearly 70 years into the past and we can well imagine the interest with which reports of strong currents, and of current setting northward, instead of in the usual southerly direction, were received and discussed in the Sydney of 1889. It must be remembered that at that time little was known of the rates and degree of variability of the currents of the South Pacific. The general directions of the three main ones, the northerly set of the Peru Current, the westerly set of the Equatorial Current and the southerly set of the current off the east coast of Australia, southward of about lat. 25°S., were well known. The latter current was then called the Australian Current, but is now known as the East Australian Coast Current. No current atlas of this ocean was available.

It is therefore of interest to compare the reports given in the extract with the information we now have about the current in the region of Sydney. This information is derived from the recent charting of the currents of the South Pacific. The work of charting is still in progress for the eastern part of the ocean, and when it is completed a new edition of the atlas M.O. 435, *South Pacific Ocean Currents*, will be published.

On our quarterly charts two roses cover the coastal region between lat. 26°S. and Cape Howe, the boundary between them being in lat. 34°S., which is almost that of Sydney (33° 52'S.). More of the stronger southerly sets of the East Australian Coast Current occur to the northward of lat. 34°S. than further south, where, however, fewer observations are available. There is a marked seasonal variation of this current, both in strength and frequency of southerly sets, which are greatest in summer, December to February, and least in winter, June to August. This applies to the whole course of the current from lat. 25°S. to Cape Howe. As an example, about 10 per cent of the currents in December to February exceed 2 knots, northward of lat. 34°S.; in June to August the proportion is less than 1 per cent. Thus the statement in the first sentence of the newspaper extract is correct. This is followed by remarks which seem to imply that the currents in December and January 1889 were particularly strong, even for the summer season. This is of course possible, but we have no

means of checking it as the small number of currents available for the 1880s does not permit of any adequate comparison of different individual years of that period.

Of the total of 840 current observations available throughout the year, between lats. 25°S. and 34°S., for the period 1855 to 1939, the number of currents exceeding the rate of 2 knots is distributed as follows: December to February, 23; March to May, 17; June to August, 1; September to November, 8. The number of currents exceeding the rate of 3 knots is only 9 for the whole year, 5 of which were recorded in March to May, 3 in September to November and 1 in December to February. Owing to the difficulty of establishing an accurate D.R. position, especially when tacking, the currents derived by sailing ships were sometimes exaggerated.

The remarks on northerly currents in the extract imply that their occurrence was considered rather surprising. Actually, it is one of the features of the East Australian Coast Current that northerly sets, in opposition to the main direction of the current, occur throughout the year. Their frequency is, however, the reverse of that of the southerly currents, being greatest in winter and least in summer. In a few instances they exceed the rate of 2 knots and one has been recorded just exceeding 3 knots, 73 miles per day. E. W. B.

# Book Reviews

*Notes on the Problems of Cargo Ventilation*, by W. F. MacDonald. $10\frac{3}{4}$ in $\times$ $8\frac{1}{2}$ in. pp. x + 38. World Meteorological Organisation, Technical Note No. 17, Geneva, 1957. 3 Swiss fr.

This booklet, which is written in the form of a technical note, was prepared by a Working Group of the Commission for Maritime Meteorology (W.M.O.), of which Mr. W. F. McDonald was chairman. The Working Group was constituted at the London conference of the Commission in 1951 with the express purpose of compiling this booklet, because it was felt that there was an international need for technical advice about the meteorological aspects of this problem. The work was concluded at the Hamburg conference of the Commission in October 1956, when it was approved by the Commission. During the interim period, the chairman of the Working Group did a world voyage in a cargo ship in order to get some first-hand information on the subject and he discussed it on the spot with experts in various countries, with other members of the Working Group and with the President of the Commission.

The foreword of this booklet explains that the purpose of the booklet is practical, namely " to contribute to the betterment of cargo ventilation . . . and if possible aid in lessening deterioration and the waste that arises from improperly controlled moisture in ships' holds ". The author expresses a hope that means will be found to make its information available to the maritime interests of various nationalities.

The booklet does not attempt to introduce anything revolutionary, and it certainly does not suggest that any great expense need be made by the shipowner in order to provide for a rational control of the moisture in a ship's hold. The booklet tends to show that, with the aid of some simple instrumentation and perhaps the fitting of some " inspection vents " in the ship's ventilators, combined with a reasonable amount of knowledge about the elementary principles of atmospheric moisture and its variations by the ship's officers, quite good results can probably be attained.

The booklet is divided into five main sections, entitled: " Limitation of the problem discussed "; " Why ventilate (general problems) "; " Simple principles of ventilation management "; "Air temperature and moisture determination for ships' ventilation "; and " Summary and Recommendations ". At the end of the book are three annexes which give the views of experts upon particular aspects of the problem. Annex A, issued by the Deutscher Wetterdienst Seewetteramt in Hamburg, is entitled " Meteorological aspects of cargo ventilation " and it summarises some of the outstanding investigations conducted with institutions concerning the meteorology of ships' holds. Annex B, by W. F. McDonald, is entitled " The practical meaning and the measurement of dew point temperatures " and is

written from the viewpoint of the meteorologist. Annex C has the rather quaint title of " Comments on the discussed problems " and it consists of extracts from letters by experts in the shipping industry (Marine Superintendents and others) in which they comment upon the contents of a preliminary version of the publication which was circulated to them. Letters are quoted from the Marine Superintendents of several British and French shipping companies, by French and American insurance companies and by an American shipbuilding company.

The contents of this booklet do not differ widely from what was said by H. C. Shellard in his article entitled " The application of meteorology to the care of cargo in a ship's hold ", which was published in *The Marine Observer*, October 1957. In his conclusion, the author recommends that " means be provided aboard ship to facilitate control measurements in samples of air entering and leaving the ventilation system aboard ship ". In the course of the discussion he describes and illustrates types of simple psychrometers which might be used in this connection.

The contents of this booklet are such that they could usefully be read and studied by all ships' officers. C. E. N. F.

*Radar Observer's Handbook for Merchant Navy Officers*, by W. Burger, M.SC., Extra Master. $8\frac{1}{2}$ in. $\times$ $5\frac{3}{4}$ in. pp. xii + 155. *Illus.* Brown, Son & Ferguson, Ltd., Glasgow, 1957. 16s.

The contents of this book are conveniently divided into 18 short chapters. The first two are devoted to the elementary principles of radar and Chapters 3 to 7 deal with the characteristics, general description and operating procedure of a modern radar set. Chapters 8 to 12 are devoted to " Interpretation of Display ", subdivided into " effects of size, shape, aspect and composition on echo strength and detection ranges "; " navigational targets "; " other factors affecting detection ranges "; " factors which might cause faulty interpretation "; and " ice and icebergs ". Among the subjects dealt with in these important chapters are various types of land, ship and buoy targets, and the effect of various meteorological factors upon radar performance generally. Chapters 13 to 15 deal with " The use of Radar for Navigation ", whilst Chapters 16, 17 and 18 are entitled " Radar Log ", " Plotting " and " Use of Radar for Anti-Collision " respectively. At the end of the book are a number of radar plotting problems with their answers, a speed and distance table and some revision questions.

The style of the book is simple, straightforward and easy to read. There are numerous diagrams, but some of these—particularly those dealing with radar plotting problems—are not very well drawn and the lettering could usefully be improved. The first few chapters, dealing with the fundamental principles of radar, contain a number of vague and rather loose statements which may cause confusion and incorrect concepts in the minds of those who are unfamiliar with radar and electrical principles. There is also a tendency in these chapters to insert small items of information which are irrelevant to the subject matter of the context, and in places to use incorrect abbreviations. The overall impression left is that in an effort to explain matters in a simple manner, the author has tended to over-simplify.

The " Operational " part of the book, contained in Chapters 8 to 18, is, in general, quite admirable and contains a wealth of detail and useful hints which cannot fail to be valuable to any seaman who uses radar. Throughout these " Operational " chapters the author rightly stresses the fact that radar is, after all, only an aid to navigation; that unless it is used intelligently, and unless plotting is carried out when it is being used for an anti-collision device, it can lead the mariner into trouble. He also stresses the desirability of associating radar with other aids to navigation and of practising with it in clear weather whenever possible. In the chapter on " Plotting " he says: " one can only plan avoiding action properly if

the other ship's course and speed can be estimated. Alterations of course for ships not seen in this case are irresponsible actions". "The master should never act less cautiously . . . than he would have done if there was no radar on board. On the contrary, he can increase the safety by treating echoes forward of the beam within a distance of three miles as sound signals, and he should stop the engines". These quotations are typical of the commonsense advice which the author gives.

The *Radar Observer's Handbook* should be a useful and practical book of reference for any ships' officer, whether he has done a radar observer's training course or not.

C. E. N. F., C.V.E.

## OFFICIAL PUBLICATION

*Some typical weather maps:* M.O. 632, Her Majesty's Stationery Office, London, 1957. Price 1s. 9d. net.

This publication replaces the pamphlet M.O. 337, called *Examples of weather maps*, which has in the past been found useful in schools and other institutions where elementary meteorology is taught. The new pamphlet is in effect an extract from M.O. 595, *Weather Map*, an introduction to weather forecasting, fourth edition, 1956. It contains eight maps showing typical pressure distributions over western Europe and the eastern North Atlantic. The main features of each are indicated and the method of decoding and plotting the reports from land stations and from ships is briefly described. The pamphlet thus provides an up-to-date introduction to the study of synoptic meteorology.

# Personalities

RETIREMENT.—At the end of May 1958, CAPTAIN F. LOUGHEED retired after 34 years with the New Zealand Shipping Company.

He went direct to sea at the age of 15, serving the whole of his apprenticeship in one ship, *Ganges*, owned by the Mercantile Steamship Company of London, and during the last two years of that time he sailed as 3rd Mate and also acted as 2nd Mate. When he obtained his 1st Mate's certificate in 1919 he ended his services with the Mercantile Company and served his time for master in three different ships, one of which, *Hunnie*, a prize ship operated by the Indian Marine, was at the Black Sea port of Novorossisk during the Russian revolution.

In 1924, when he obtained his Master's certificate, he joined the New Zealand Shipping Company and in 1940 he was appointed to his first command, S.S. *Northumberland*. In June 1941, when in command of S.S. *Norfolk*, he was torpedoed off north-west Ireland. In January 1942 he was in command of S.S. *Surrey* when she lost her rudder in the North Atlantic and reached Bermuda after steaming 2,217 miles in 16 days, steering by adjusting the engine revolutions and using the starboard paravane to counter the transverse thrust of the propeller. The *Surrey*, after having a new rudder fitted in a U.S. port, was torpedoed in the Caribbean, and the crew were picked up after four days in the boats and landed at Colon.

Captain Lougheed has been associated with the Meteorological Office since he joined the New Zealand Shipping Company in 1924, his first logbook coming from S.S. *Orari* on 16th May of that year. His last logbook was received from S.S. *Ruahine* on 18th March, 1958, and in the interval he had sent us 31 logbooks, of which 25 were classed as "Excellent". Excellent Awards were received by Captain Lougheed in 1952 and 1956.

On 16th September, 1956, Sir Graham Sutton, Director-General of the Meteorological Office, presented Captain Lougheed with a barograph for consistently good meteorological work over a period of years.

We wish him good health and happiness in his retirement. J. C. M.

# Notices to Marine Observers

## OBSERVATIONS OF OCEAN WAVES

The meteorological logbooks used by selected ships provide in columns 37, 38 and 39, one above the other, spaces for the recording of two sets of waves to cover occasions when waves are observed coming from more than one direction. The seaman, no doubt, will instinctively separate these two systems into " sea " (i.e. disturbance caused by the present wind) and " swell " (i.e. disturbance caused by passed or distant winds) and many observers do, in fact, label their observations "sea" or "swell" as the case may be. For some years, however, it has been our practice to treat them both together as " waves ".

For climatological purposes it has now been found desirable to revert to the former practice, familiar to all seamen, of regarding sea waves and swell waves as separate elements. No change of observing practice is necessary, but, when it is possible to make a clear distinction between sea and swell, officers are asked to record the sea waves on the upper line and the swell waves on the lower. In the radio weather message the upper line will naturally come before the lower, i.e. sea before swell. There may of course, in addition to the sea and swell, be another, lesser, swell present, in which case another 1 $d_w d_w P_w H_w$ group should be added, making three in all. If there is a swell without any sea, the first of these groups, and the upper line, should read 100Xo.

## AMENDMENTS TO VISUAL GALE WARNING PROCEDURE TO BE EFFECTIVE FROM 1st JUNE, 1958

The meanings of visual gale warning signals (cones) displayed at stations around the coasts of the United Kingdom, were revised on 1st June, 1958. The new meanings are as follows:

The display of a visual gale warning signal indicates that a gale is expected within 12 hours, or is already in progress, in the coastal sea area on the landward boundary of which the station flying the cone is situated. Thus a cone hoisted at Hartland would indicate a gale warning in operation for the sea area LUNDY. (In this context the term " gale " refers to a mean wind of force 8 or above, or a wind gusting to force 9, in the Beaufort scale.)

The cone signal will be lowered when the wind is below gale force and a renewal of gale force winds is not expected within six hours, so that the cone signal is left flying during a temporary abatement of a gale if a renewal is expected.

The coastal sea areas are those, designated for use in the preparation of weather forecasts for shipping and for dissemination through the medium of B.B.C. and G.P.O. coastal radio station broadcasts, which abut the coasts of the United Kingdom. A map showing the names and boundaries of these coastal sea areas is on page 43 of M.O. 509, *Decode for Use of Shipping*.

The North Cone (point upwards) is hoisted for gales from any point north of the east–west line.

The South Cone (point downwards) is hoisted for gales from any point south of the east–west line.

When the direction of the gale is expected to change from the northern side to the southern side of the east–west line, the north cone is lowered and the south cone hoisted. Conversely, when the direction of the gale is expected to change from the southern to the northern side of the east–west line, the cone is changed accordingly.

Inshore mariners, for whose benefit the visual gale-warning service is primarily intended, are advised that a displayed cone signal now relates solely to the operation of a local sea area gale warning. *Information given by these cone signals is to be*

*regarded only as supplementary to the more detailed weather bulletins for shipping which are regularly broadcast from B.B.C. and G.P.O. W/T transmitters.*

## WEATHER BULLETINS FOR COASTAL SHIPPING

In order to overcome reception difficulties in the case of weather bulletins for coastal shipping issued by G.P.O. coast stations, and to ensure reception aboard such ships of bulletins concerning areas into which they will pass before the next weather bulletin is issued, a new allocation of the areas to be served by each G.P.O. broadcasting station (involving overlapping of the bulletins for particular areas where necessary) is being introduced on 1st July, 1958. From that date G.P.O. coast stations will issue bulletins for the areas as shown below. An amendment is being issued to M.O. 509, *Decode for Use of Shipping*.

The Greenwich mean times at which these broadcasts take place remain unchanged (and are shown here for the convenience of the reader).

| | | | |
|---|---|---|---|
| Niton (GNI) | 0830<br>2030 | W/T | Dover, Portland, Wight |
| | 0833<br>2033 | R/T | Portland, Wight |
| Land's End (GLD) | 0848<br>2048 | W/T | Lundy, Sole, Plymouth, Biscay, Finisterre |
| | 0803<br>2003 | R/T | Lundy, Sole, Plymouth, Biscay, Finisterre |
| Ilfracombe (GIL) | 0833<br>2033 | R/T | Lundy, Fastnet |
| Portpatrick (GPK) | 0830<br>2030 | W/T | Irish Sea, Lundy |
| | 0833<br>2033 | R/T | Irish Sea, Malin |
| Oban (GNE) | 0803<br>2003 | R/T | Malin, Hebrides, Bailey, Rockall |
| Wick (GKR) | 0848<br>2048 | W/T | SE. Iceland, Faeroes, Hebrides, Fair Isle, Viking |
| | 0803<br>2003 | R/T | SE. Iceland, Faeroes, Hebrides, Fair Isle, Viking, Cromarty |
| Stonehaven (GND) | 0830<br>2030 | W/T | Forth, Cromarty, Forties |
| | 0833<br>2033 | R/T | Forth, Cromarty, Forties |
| Cullercoats (GCC) | 0848<br>2048 | W/T | Humber, German Bight, Thames, Tyne, Dogger, Fisher |
| | 0803<br>2003 | R/T | Tyne, Dogger, Fisher |
| Humber (GKZ) | 0833<br>2033 | R/T | Humber, German Bight |
| North Foreland (GNF) | 0803<br>2003 | R/T | Thames, Dover, Wight |
| Valentia (EJK) | 0830<br>2030 | W/T | Shannon, Fastnet |
| | 0833<br>2033 | R/T | Shannon, Fastnet |
| Malin Head (EJM) | 0848<br>2048 | W/T | Hebrides, Bailey, Rockall, Malin |

*Note.* The broadcasts from Burnham-on-Sea (GRL) will cease; the W/T transmission from Malin Head may be taken over by Oban at a later date.

## CHANGE OF ADDRESS—P.M.O., LONDON

The new address of the Port Meteorological Officer, London, is South Side, King George V Dock, Silvertown, London, E.16. The telephone number is ALBert Dock 3931.

The list of addresses given on page 240 of the October 1957 number of *The Marine Observer* should be amended accordingly.

### Postal Arrangements

The quarterly numbers of *The Marine Observer* are published on the last Wednesdays of December, March, June and September.

*The Marine Observer* is addressed to the Captain ,S.S./M.V....., c/o the owners, and captains are requested to make their own arrangements for forwarding.

Shipowners, Marine Superintendents and all concerned in the dispatch of mails to ships are asked to kindly facilitate the despatch and delivery of mail received at their offices from the Meteorological Office and "Air Publications and Forms Stores" to their ships abroad. Addressed to the captains of ships, this contains information required for the conduct of meteorological work at sea, and is most effective if received by the captains at the earliest possible date.

### Radio Weather Messages

The master of any ship which experiences frequent difficulties in clearing radio weather messages to coast radio stations in any part of the world is requested to make a note in the ship's meteorological logbook mentioning the time and date of the occurrence and to give any other information which it is thought might be helpful. The complaint will then be forwarded by the Meteorological Office to the director of the Meteorological Service to which the message was addressed with a view to the circumstances being investigated and of improving, if possible, the reception conditions at the radio station concerned.

It is only by receiving reports of this nature that we are able to know of the difficulties the radio officers aboard the selected ships experience in this respect. On receipt of all such reports we will do our best to rectify matters. Generalised reports merely stating that difficulty was experienced from time to time in clearing a message to such-and-such a station are not sufficiently explicit to enable us to take remedial action.

### Meteorological Charts for Ships leaving the River Thames

Mariners are reminded that meteorological charts for ships leaving the River Thames are prepared at the Meteorological Office in Kingsway, and dispatched by rail each day to the Pilotage Office at Gravesend. Each pilot who boards an outward bound steamer at Gravesend takes one of these forecast charts aboard for the information of the master of the ship.

At the top of the chart is a general statement about the existing weather situation based upon the 0600 G.M.T. chart that morning. The chart itself is a "prebaratic"; in other words it is a forecast chart, portraying what the general meteorological situation around the British coasts and in the Atlantic will look like at 0600 the next day. Facing the chart is a detailed forecast based upon the 0600 chart that morning.

These arrangements have been made possible thanks to the kind co-operation of the Elder Brethren of Trinity House and British Railways.

### ERRATUM

*The Marine Observer*, April 1958, opposite page 73. It is regretted that the centre drawing (waterspout observed from S.S. *Prospector*) appeared upside down.

# Fleet Lists

## GREAT BRITAIN

The following is a list of British ships voluntarily co-operating with the Marine Division of the Meteorological Office.

The names of the Captains, Observing Officers and Senior Radio Officers are given as ascertained from the last written returns received. The date of receipt of the last return received is given in the second column.

All returns received from observing ships will be acknowledged, direct to the ship, by the Marine Superintendent.

The Port Meteorological Officers and Merchant Navy Agents at the ports will make personal calls on the Captains and Observing Officers as opportunity offers, or on notification from the ship at any time when their services are desired.

Excellent awards are made at the end of each financial year. The names of the Captains, Principal Observing Officers and Senior Radio Officers gaining these awards are published in a special list in *The Marine Observer*.

It is requested that prior notification of changes of service, probable periods of lay-up, transfer of Captain, or other circumstances which may prevent the continuance of voluntary meteorological service at sea, may be made to the appropriate Port Meteorological Officer or Merchant Navy Agent.

Captains are requested to point out any errors or omissions which may occur in the list.

### Selected Ships

| Name of Vessel | Last Return Received | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
|---|---|---|---|---|---|
| *Accra* | 19.11.57 | C. H. Sweeny | R. H. Smith, A. Main | J. Stuart | Elder Dempster Lines, Ltd. |
| *Achilles* | 28.2.57 | D. Jones | D. M. Wright, R. C. Risely, D. J. Gardner, J. E. Johnston | T. King | A. Holt & Co. |
| *Adelaide Star* | 25.3.58 | D. R. MacFarlane, D.S.O., O.B.E. | B. D. C. Franklin, T. A. Ireland, J. M. R. Roberts | W. Wade | Blue Star Line, Ltd. |
| *Aden* | 28.3.58 | J. L. Dunkley | M. G. Fothergill, C. N. Crystall, D. Perry | P. W. Stevens | P. & O. Steam Navigation Co. |
| *Afghanistan* | 18.2.58 | C. Henderson | J. Downie, A. Jenkins, A. Farquharson | J. Jenkins | F. C. Strick & Co., Ltd. |
| *Afric* | 31.12.57 | A. E. Smith | J. M. Brew, D. E. Hammerton, J. Glyde | J. Taylor | Shaw Savill & Albion Co., Ltd. |
| *Ajana* | 15.11.57 | F. W. Mould | J. M. Hunter, H. R. Coates, D. J. Hide, R. L. Lambert | T. R. Tomlinson | Trinder, Anderson & Co., Ltd. |
| *Albistan* | 10.2.58 | E. C. Thompson | K. Brown, W. Bosson, J. Brown | T. Gardner | F. C. Strick & Co., Ltd. |
| *Alcantara* | 6.2.58 | D. R. Miller | W. Carruthers, P. W. Ramage, P. Ratcliffe | R. E. Hammond | Royal Mail Lines, Ltd. |
| *Alsatia* | 26.4.57 | T. T. Sheehan, R.D., Cdr. R.N.R. | J. Board, J. Stewart, J. Grindrod, B. Edwards | J. Bishop | Cunard Steamship Co., Ltd. |
| *Alva Star* | 1.1.58 | H. Sanders | V. Borlase, G. Lewis, N. Morris | W. J. Cochrane | Alva Steamship Co., Ltd. |
| *Amakura* | 9.5.58 | S. Armitage | D. Andrew, T. Jones | R. Bankes | Booker Line, Ltd. |
| *Andes* | 15.5.57 | D. R. Miller | J. Hunt, I. Farquharson, C. Sturke | —. Quinton | Royal Mail Lines, Ltd. |
| *Andria* | 16.1.58 | H. L. de Legh, R.D., Cdr. R.N.R. | B. Mullenger, D. Gunn, W. Nightingale | J. Byrne | Cunard Steamship Co., Ltd. |
| *Apapa* | 28.1.58 | J. S. Cowan | R. H. C. Dale, P. R. Byrne | G. I. Gilling | Elder Dempster Lines, Ltd. |
| *Arabia* | 1.1.58 | W. B. Tanner, R.D., Capt. R.N.R. (Retd.) | M. C. Locmore, P. B. Watson, A. P. Tarbuck, C. J. Allister, R. Jones | T. D. Sandham | Cunard Steamship Co., Ltd. |
| *Arabistan* | 15.5.57 | R. B. Arthur, M.B.E. | J. E. Parker, F. W. Bush, J. S. Catlow | F. O. Flynn | F. C. Strick & Co., Ltd. |
| *Araby* | 18.3.58 | M. B. Wingate | D. McCombie, J. Jones, D. Williams | J. Aguis | Royal Mail Lines, Ltd. |
| *Arakaka* | 27.1.58 | J. A. Carter | R. A. Hammond, F. Sanchez, J. C. Williams | W. Hughes | Booker Line, Ltd. |
| *Argentina Star* | 27.3.58 | E. R. Pearce, O.B.E. | A. M. Shearing, C. Worthington, J. Suddes | R. Shore | Blue Star Line, Ltd. |
| *Argyllshire* | 31.12.57 | A. J. Hogg | M. R. Pearson, I. Bennet, D. V. Jones | G. Martyn | Clan Line |
| *Ariel* | 31.3.58 | C. M. G. Evans, M.B.E. | A. C. H. Child, E. J. Evans, D. P. Chisholm, J. Adams | C. Reed | H.M. Postmaster-General |
| *Armagh* | 28.5.57 | T. Hastings | R. S. Grubb, H. McGill | G. Cockburn | Avenue Shipping Co. |

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| *Arundel Castle* | 16.8.57 | D. D. McKenzie | —. Roberts, —. Davies, —. Fry | G. Kilminster — Union Castle Mail S.S. Co., Ltd. |
| *Ashburton* | 3.12.57 | J. D. Blake | P. D. Guerrier, H. Jones, C. Milner | V. H. Ottley — Trinder, Anderson & Co., Ltd. |
| *Asia* | 28.3.58 | H. A. Stonehouse, D.S.C., R.D., Cdr. R.N.R. | M. V. P. Doyle, A. C. Broster, R. E. Hills, W. S. Stephens | L. C. Francis — Cunard Steamship Co., Ltd. |
| *Assyria* | 26.2.58 | J. G. Bradley, R.D., Capt. R.N.R. | G. H. N. Keysat, W. McDougal, P. J. Kendall, I. K. Grindrod | B. A. Long — Cunard Steamship Co., Ltd. |
| *Athelfoam* | 19.8.57 | J. P. Coffee | J. Marshall, D. Carstairs, M. Phelano, D. F. Steers | W. Read — Athel Line, Ltd. |
| *Athenic* | 31.12.57 | G. N. Heywood | B. V. Smith, J. O. Williams, B. H. Agnew | H. Knight — Shaw Savill & Albion Co., Ltd. |
| *Athlone Castle* | 7.2.58 | C. C. Page | D. Wilkinson, B. Bradley, P. Williams | H. Liggins — Union Castle Mail S.S. Co., Ltd. |
| *Aureol* | 14.8.57 | W. Munt | H. Ross, A. Monro, —. Watney-Evans, W. E. Christie, P. Tehan | F. W. J. Broomfield — Elder Dempster Lines, Ltd. |
| *Australia Star* | 17.10.57 | J. A. Hoppé | W. G. Jones, D. Newlin, J. Howatson | L. Cooper — Blue Star Line, Ltd. |
| *Australind* | 16.10.56 | J. F. Wood | B. D. Diggle, H. Gill, D. N. Brooks, A. L. White | T. M. Sherriff — Trinder, Anderson & Co., Ltd. |
| *Avonmoor* | 30.5.57 | A. Coaster | D. Nicholas, J. Reay, T. E. Wilson | J. Hand — Walter Runciman & Co., Ltd. |
| *Balaena* | * | P. Virik | A. Jensen | J. Dahl — Hector Whaling, Ltd. |
| *Balantia* | 23.1.58 | R. Phillips | R. Dole, R. Bland, R. O. Fairbairn | S. Ridley — Royal Mail Lines, Ltd. |
| *Baron Elphinstone* | 27.1.58 | C. R. Roy | G. R. Davidson, G. Lindsay, J. Rennie | G. Evans — H. Hogarth & Sons, Ltd. |
| *Baron Glenconner* | 8.1.58 | J. Reid | G. Downie, J. Morrison, A. Pickett | D. Bullard — H. Hogarth & Sons, Ltd. |
| *Baron Murray* | 26.11.57 | W. Warden | I. Connel, W. Warden, S. Jackson | R. Foster — H. Hogarth & Sons, Ltd. |
| *Barrister* | 31.3.58 | J. F. W. Wallis | J. MacDonald, J. Bean, J. L. Beaton | S. Fletcher — T. & J. Harrison, Ltd. |
| *Baskerville* | 26.11.57 | J. G. Wilson | N. L. Smith, C. A. Hann, D. Broadway | B. Withers — Runciman (London), Ltd. |
| *Bassano* | 5.3.58 | G. Goodman | J. A. Deheer, J. W. Guilliatt, A. M. Robertson | A. Leary — Ellerman's Wilson Line, Ltd. |
| *Beaverburn* | 19.2.57 | W. J. P. Roberts | G. Cotton-Bardener, —. Roberts | G. Adamson — Canadian Pacific S.S., Ltd. |
| *Beavercove* | 14.1.57 | E. F. Aikman | J. D. Goring, R. Barton | C. Jones — Canadian Pacific S.S., Ltd. |
| *Beaverdell* | 19.12.57 | W. J. P. Roberts | J. Yeandle-Hignell, E. Brewer, D. J. Roberts | J. Coutts — Canadian Pacific S.S., Ltd. |
| *Beaverford* | 19.2.58 | L. H. Johnston, M.B.E. | R. P. Wilman, J. Griffin, G. G. C. Willcock | W. F. Jamfrey — Canadian Pacific S.S., Ltd. |
| *Beaverglen* | 8.8.57 | G. C. Geddes | L. Brockbank, M. Myers, P. Embleton | H. G. Percival — Canadian Pacific S.S., Ltd. |
| *Beaverlake* | 19.8.57 | G. C. Geddes | A. C. Mathews, E. Brewer, P. Embleton | A. McCartney — Canadian Pacific S.S., Ltd. |
| *Beaverlodge* | 28.2.57 | L. H. Johnston, M.B.E. | P. D. Roberts, T. Hughes, J. Bryan | F. Howard — Canadian Pacific S.S., Ltd. |
| *Bennevis* | 24.1.58 | T. P. Barr | T. Fyfe, C. P. Browne, N. Handley | W. Paterson — Ben Line Steamers, Ltd. |
| *Benvannoch* | 28.5.57 | A. Sinclair | I. A. Hamilton, A. Syme, N. J. Large | P. Fitzgerald — Ben Line Steamers, Ltd. |
| *Birmingham City* | 25.10.57 | F. R. Neil | A. Ashton, D. Wilton, P. Wright | H. Kemper — Charles Hill & Sons |
| *Biscoe* | 17.7.57 | S. K. Williams | A. J. Gibbs, R. O. Jones, R. Smith | M. Shereef — Hector Whaling, Ltd. |
| *Bransfield* | 4.5.58 | M. Paulson | A. G. Giblin | T. Salvesen — Hector Whaling, Ltd. |
| *Brasil Star* | 31.12.57 | G. E. Barnard | J. R. Massey, K. MacKintosh, P. Gilks, D. Rawlinson, E. S. W. Gill, D. Hulme | J. Simister — Blue Star Line, Ltd. |
| *Bravo* | 10.12.57 | J. G. Etches | P. Ramsay, R. Jones, M. Morell | W. E. L. Gittins — Ellerman's Wilson Line, Ltd. |
| *Brisbane Star* | 15.1.58 | S. Foulkes | —. Rawlinson, —. Thomas, —. Hutchison | J. Williams — Blue Star Line, Ltd. |
| *Britannic* | 12.11.57 | J. W. Caunce, R.D., Cdr. R.N.R. (Retd.) | G. Parry, P. Lawley, P. T. Bingley | J. Kidson — Cunard Steamship Co., Ltd. |
| *British Consul* | 31.10.57 | W. L. Pugh | R. O. Swanson, F. W. D. Lambert, J. M. Borrell | P. Early — B.P. Tanker Co., Ltd. |
| *British Endeavour* | 19.8.57 | G. P. Barton | S. Pollock, K. V. Meacock, D. C. Burns | R. Whenn — B.P. Tanker Co., Ltd. |
| *British Escort* | 28.2.58 | A. R. Tuckett | A. H. Skellern, A. H. McGregor, C. W. France | T. V. Goodman — B.P. Tanker Co., Ltd. |
| *British General* | 7.2.58 | R. T. Williams | R. G. Twist, J. Pinkney, P. Rogers, J. R. Beckwith | J. R. Evans — B.P. Tanker Co., Ltd. |
| *British Loyalty* | | H. Lawson | P. H. Bogbie, S. F. Bryce, G. Barber | T. Bellemy — B.P. Tanker Co., Ltd. |
| *British Patience* | 18.10.57 | W. O. Armstrong | A. M. Duff, J. M. Ward, R. J. Higgins | P. L. Smith — B.P. Tanker Co., Ltd. |
| *British Piper* | 18.10.57 | D. Hurst | G. Lambert, C. G. Jones, E. D. Knipe | D. H. E. Wardley — B.P. Tanker Co., Ltd. |
| *British Resource* | 2.7.57 | L. H. Digby | F. Darby, A. B. Durham, N. D. C. Michaels | M. McNeil — B.P. Tanker Co., Ltd. |
| *British Sailor* | 20.2.58 | H. Jerry | G. W. McCathie, W. Stevens, C. Kelly | C. A. McGill — B.P. Tanker Co., Ltd. |
| *British Splendour* | 12.3.58 | G. R. B. MacKillican, M.B.E. | C. E. Hayward, A. Hughes, E. M. Crawford | D. Salmon — B.P. Tanker Co., Ltd. |
| *British Union* | 15.11.57 | R. T. C. Wright | B. J. Grandfield, I. H. Wall, A. Whelpton, J. Kemp | J. MacDonald — B.P. Tanker Co., Ltd. |
| *Brittany* | 18.9.56 | C. C. Dingle | T. B. Casey, J. A. Martin, R. W. Clarke | P. Mahony — Royal Mail Lines, Ltd. |
| *Brockleymoor* | 31.3.58 | D. J. Nicholas | F. Shuttleworth, T. R. Rowe, D. Phillips | J. Richardson — Walter Runciman & Co., Ltd. |
| *Cairnavon* | 11.2.58 | G. H. Percy | J. Liston, N. Shell, R. Somers | P. Grantham — Cairns, Noble & Co. |

* Radio messages only have been received: no written records.

| Name of Vessel | Last Return Received | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
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| *Cairndhu* | 7.1.58 | J. W. Scott | R. L. Andrews, D. M. Aitchison, B. L. Douglas, D. Curry | W. P. Grieves | Cairns, Noble & Co. |
| *Cairngowan* | 6.3.58 | I. G. Foster | K. B. Singer, J. Lobban, D. G. Andrew | E. Johnston | Cairns, Noble & Co. |
| *Calabar* | 19.3.58 | W. E. Humphries | R. I. Jones, H. A. Ross, B. P. Telfer, B. Mills | S. Hewitt | Elder Dempster Lines, Ltd. |
| *Caledonia* | 5.11.57 | J. L. Gibson | D. Barclay, A. McKelvie, S. Conner | J. McConnel | Anchor Line, Ltd. |
| *Calgaria* | 28.3.58 | J. H. Clinton | K. Davies, A. MacLean, P. Telford | J. Moody | Donaldson Line, Ltd. |
| *Caltex Canberra* | 26.11.57 | E. H. Bushell | G. Dinsdale, C. Thomas, R. Wilson | W. G. Rickards | Caltex Trading & Transport Co., Ltd. |
| *Caltex Edinburgh* | 4.3.58 | T. W. Curling | M. J. Warrick, J. Blackburn, W. P. Bilton, I. J. I. Barclay | J. Delahunt | Overseas Tankship (U.K.), Ltd. |
| *Caltex London* | 11.12.57 | C. M. Edward | A. F. Billett, R. B. Dickson, B. Jones, J. Nicholson | D. Rankine | Overseas Tankship (U.K.), Ltd. |
| *Cambridge* | 13.1.58 | P. P. O. Harrison | R. N. Jordan, J. Weston, L. E. Howell, A. Meneil | W. G. Thomas | Federal Steam Navigation Co., Ltd. |
| *Canopic* | | J. L. Stobbs, R.D., Lt.-Cdr. R.N.R. (Retd.) | P. Bower, J. Newsham, L. Money, R. N. Jordan | K. Ormeroid | Federal Steam Navigation Co., Ltd. |
| *Canton* | 1.1.58 | R. K. Fox | M. Hannah, P. Jackson, P. Beeley, K. S. Maclean | F. Portess | P. & O. Steam Navigation Co. |
| *Cape Clear* | 19.3.58 | P. Farmborough | J. Carr, H. Gilman, I. King | E. Sandle | Lyle Shipping Co., Ltd. |
| *Cape Grafton* | 7.3.58 | P. Smith | F. Saunders, A. C. Hunter, A. Macbain | M. N. Hynes | Lyle Shipping Co., Ltd. |
| *Capetown Castle* | 23.5.57 | J. Trayner | —. Whitchurch, —. Acutt, J. Gamble | R. Brew | Union Castle Mail S.S. Co., Ltd. |
| *Captain Cook* | 6.3.58 | A. Bankier | F. MacKay, T. Scott, A. H. Ross | L. W. Hooper | Donaldson Line, Ltd. |
| *Captain Hobson* | 29.1.58 | A. Rowlands | I. S. Murchison, J. F. Gaffney, J. A. Reid | H. W. Duncan | P. Henderson & Co., Ltd. |
| *Cardiganshire* | | R. T. Harries | I. W. Jones, K. F. Eder, E. L. Stubbins | | Glen Line, Ltd. |
| *Carinthia* | 5.11.57 | D. M. Maclean, D.S.C., R.D., Capt. R.N.R. (Retd.) | J. P. Martin, J. Clemenson, D. Ridley, G. Parry | W. Steward | Cunard Steamship Co., Ltd. |
| *Carnarvon Castle* | 15.3.57 | W. S. Byles, R.D., Capt. R.N.R. | F. W. O'Grady, B. Bradley, R. N. Toye | H. G. Liggins | Union Castle Mail S.S. Co., Ltd. |
| *Caronia* | 1.1.58 | A. Mackellar, R.D., Cdre. R.N.R. (Retd.) | I. G. Macgregor, H. Hurtley, R. C. Turner | I. Macdonald | Cunard Steamship Co., Ltd. |
| *Carthage* | 19.2.58 | W. T. C. Lethbridge | A. D. Ironside, J. E. Leggett, J. D. Cornwall | F. Arthurs | P. & O. Steam Navigation Co. |
| *Caslon* | 9.1.58 | T. Hodgson | R. Gibbens, T. Healey, I. Rollo, P. Holton | W. Brown | Runciman (London), Ltd. |
| *Ceramic* | 7.1.58 | F. A. Smith | —. Condie, —. Falkiner, —. Reid, —. Alty | R. O'Shaughnessy | Shaw Savill & Albion Co., Ltd. |
| *Chantala* | 21.8.57 | H. R. Smith | A. D. Methuen, M. Warren, T. E. Kelso | R. D. Dingley | British India Steam Nav. Co., Ltd |
| *Chindwara* | 23.1.58 | B. A. Rogers, D.S.C., R.D., Cdr. R.N.R. (Retd.) | J. A. Stanton, R. Sandeman-Gay, A. L. Britton | J. Downey | British India Steam Nav. Co., Ltd. |
| *Cilicia* | | A. C. Johnston | H. M. Keenan, R. Crawford, F. J. McDade, —. Allum | H. Milligan | Anchor Line, Ltd. |
| *Cingalese Prince* | 4.2.58 | H. J. Pirie | R. V. Hann, J. G. Smith | K. A. Brooks | Prince Line, Ltd. |
| *City of Barcelona* | 5.11.57 | A. H. G. Jones | K. Crow, J. Schofield, K. Dinsdale | D. E. Byron | Ellerman Lines, Ltd. |
| *City of Birmingham* | 18.10.57 | P. C. Arthur | D. R. Cumming, W. Paton, C. J. Oakle | P. Neve | Ellerman Lines, Ltd. |
| *City of Brisbane* | 16.12.57 | E. G. Chapman | C. A. Fawcett, A. K. Comrie, J. Robinson, K. James | F. Hall | Ellerman Lines, Ltd. |
| *City of Bristol* | 4.1.57 | T. L. Vaughan | M. Hurley, J. Knight, L. Roberts, J. Lyons | D. Meigham | Ellerman Lines, Ltd. |
| *City of Cape Town* | 26.11.57 | T. Lovell | R. F. Bailey, A. M. J. Buchan, A. J. Evans | J. Larkin | Ellerman Lines, Ltd. |
| *City of Carlisle* | 5.6.57 | T. M. Williams | W. Locker, T. Innes, W. A. Browne, R. C. Shanahan | | Ellerman Lines, Ltd. |
| *City of Chester* | 31.12.57 | T. S. Dennis | R. M. Jones, A. Ramsden, J. Campbell, T. Fitchett | T. A. Harris | Ellerman Lines, Ltd. |
| *City of Coventry* | | W. S. Doidge | | | Ellerman Lines, Ltd. |
| *City of Durham* | 12.3.58 | D. C. Hamilton | M. G. Robertson, R. H. Bellhouse, G. Eades | J. Gandon | Ellerman Lines, Ltd. |
| *City of Edinburgh* | 23.5.57 | P. Byrne | C. G. Cocksedge, J. R. Lowe, R. Frame | R. Jack | Ellerman Lines, Ltd. |
| *City of Johannesburg* | 27.3.58 | J. B. MacLaren | T. C. Mathews, W. M. Macgregor, N. Pichthorne | H. MacOwan | Ellerman Lines, Ltd. |
| *City of Khartoum* | 24.2.58 | H. E. Roberts | R. O. Cutler, T. G. McKean, P. Weldon | D. Carr | Ellerman Lines, Ltd. |
| *City of Lichfield* | 10.12.57 | G. R. Jackson | R. H. Ross, I. R. Cairnel, E. R. Frich | C. A. Mackay | Ellerman Lines, Ltd. |
| *City of Liverpool* | 12.2.58 | J. L. Robertson | I. R. Hopton, K. C. Powell, K. R. Street | J. Boner | Ellerman Lines, Ltd. |
| *City of Manchester* | 18.3.58 | E. Scrymgeour | J. Peddie, S. Hider, J. M. Longstaff | R. Kerr | Ellerman Lines, Ltd. |

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| *City of New York* | 6.2.58 | A. L. Beckett | D. B. Gibbs, J. Hughes, D. Brown | J. Hinds | Ellerman Lines, Ltd. |
| *City of Pretoria* | 13.1.58 | A. G. Freeman | M. J. Hubbard, I. M. McBeath, K. W. Horton, A. J. D. Hobbs | K. G. Arthur | Ellerman Lines, Ltd. |
| *City of Swansea* | 14.2.58 | J. Vizer | J. Weld, J. Pratley, J. Addison | W. Clark | Ellerman Lines, Ltd. |
| *City of Sydney* | 12.9.57 | B. T. Wortley | G. Stogdale, J. P. Airey, G. P. Rainier | W. R. Organ | Ellerman Lines, Ltd. |
| *Clan Brodie* | 30.8.57 | A. V. Gordon | M. Jackson, E. C. Harvey, G. Emmet | R. Elliott | Clan Line Steamers, Ltd. |
| *Clan Buchanan* | 3.3.58 | H. T. Booth | B. W. Hollman, T. H. Graham, E. S. Surgey | J. Lamb | Clan Line Steamers, Ltd. |
| *Clan Campbell* | 8.4.57 | H. C. Simpson, O.B.E. | M. R. Pearson, I. W. James, P. Kent | R. F. Cole, M.B.E. | Clan Line Steamers, Ltd. |
| *Clan Chattan* | 13.12.57 | R. R. Baxter | R. W. Bathgate, D. L'Estrange, M. D. Cooper | E. Shillabeer | Clan Line Steamers, Ltd. |
| *Clan Chisholm* | 18.10.57 | W. R. Woodriffe | G. E. Mitchell, G. A. Berry, R. C. Toogood | C. Crewe | Clan Line Steamers, Ltd. |
| *Clan Davidson* | 31.12.57 | T. A. Watkinson | M. H. A. Swift, —. Thorn, G. W. A. Smith | A. W. F. Bartlett | Clan Line Steamers, Ltd. |
| *Clan Forbes* | 31.3.58 | G. W. Spiller | D. I. Duncan, G. G. Greenfield, L. Marwick | I. K. Catherall | Clan Line Steamers, Ltd. |
| *Clan Macaulay* | 4.3.58 | J. P. Dunphy | E. W. Bottom, G. F. Healy, E. N. Bass, A. K. Deacon | C. Hegarty | Clan Line Steamers, Ltd. |
| *Clan Macdonald* | 7.2.58 | H. Lockyer | R. G. Smith, A. G. Cruikshank, A. Flenley | J. W. S. Wilson | Clan Line Steamers, Ltd. |
| *Clan MacKinnon* | 4.2.58 | R. N. Mayo | W. McMunagle, K. Morton, J. Markie | J. Cox | Clan Line Steamers, Ltd. |
| *Clan MacLaren* | 5.11.57 | A. G. McPherson | E. A. Prothero, H. I. While, J. A. Hyslop | R. W. Moore | Clan Line Steamers, Ltd. |
| *Clan MacLay* | 11.7.57 | S. S. Davidson | J. W. Hogg, I. Currie, J. D. Chapel | F. Fawcett | Clan Line Steamers, Ltd. |
| *Clan MacLean* | 15.1.57 | H. Whitehead | J. G. P. Davidson, R. Richards, M. Brackenridge | T. Martin | Clan Line Steamers, Ltd. |
| *Clan Macrae* | 17.1.58 | A. Mair | G. A. Anderson, D. H. Macmillan, R. K. Wilson | A. R. Cox | Clan Line Steamers, Ltd. |
| *Clan MacTavish* | 3.12.57 | F. H. Thornton, O.B.E., D.S.C., R.D., Cdr. R.N.R. (Retd.) | M. G. Dominy, A. Sillars, O. Barnsley | W. A. Ellmers | Clan Line Steamers, Ltd. |
| *Clan Robertson* | 17.1.58 | H. J. Anchor, O.B.E., R.D., Capt. R.N.R. (Retd.) | J. B. Denyer, —. Robinson, J. D. Shearman | N. Bernie | Clan Line Steamers, Ltd. |
| *Clan Shaw* | 4.2.58 | L. C. Higgins, M.B.E. | S. R. Davidson, J. G. Smith, J. C. Smith | G. H. Hudd | Clan Line Steamers, Ltd. |
| *Clan Sutherland* | 9.11.56 | F. H. Turton | D. Stabbart, J. Gann, N. C. Von Wellingh | W. Gay | Clan Line Steamers, Ltd. |
| *Clan Urquhart* | 31.12.57 | C. M. Powell, M.B.E. | K. S. Burton, T. Halliday, C. Marshall | T. G. Jones | Clan Line Steamers, Ltd. |
| *Clydebank* | 13.3.58 | J. Ward | B. J. Saffery, J. A. Hawkes, A. Reeves | F. Paterson | Andrew Weir & Co., Ltd. |
| *Columbia Star* | 17.12.57 | M. R. Bremberg | A. J. Haslett, I. B. Owen. J. R. Rawding | R. Prince | Blue Star Line, Ltd. |
| *Condesa* | 9.1.58 | E. Lougheed | D. R. Williams, V. J. Owen, G. Evans | G. Evans | Furness-Houlder Argentine Lines, Ltd. |
| *Consuelo* | 6.12.57 | A. Gillis | B. Blampey, A. Backhouse, F. Metham | A. Aspinall | Ellerman's Wilson Line, Ltd. |
| *Corfu* | 9.8.57 | G. K. Fox | J. Dymonke-White, I. C. Bayliss, M. W. Fisher | J. M. Powell | P. & O. Steam Navigation Co. |
| *Corinaldo* | 6.8.57 | J. L. McQueen | T. McDonald, S. E. Wing, D. Campbell | J. Lamb | Donaldson Line, Ltd. |
| *Corinthic* | 5.12.57 | A. C. Jones | W. A. Murison, R. Guille, M. Hope | T. Lillis | Shaw Savill & Albion Co., Ltd. |
| *Corrales* | 27.3.58 | W. F. Young | D. H. Farthing, T. C. Mullings, R. G. Dover, T. Hancock | T. Hills | Elders & Fyffes, Ltd. |
| *Cotopaxi* | 27.5.57 | J. D. Richards | D. Pugh, J. Gurrier, D. Houghton | M. M. Garbett | Pacific Steam Navigation Co. |
| *Cretic* | 21.1.58 | N. S. Milne | C. R. Downes, J. K. Mudd, W. A. Siddall, J. Case-Green | H. M. Bursom | Shaw Savill & Albion Co., Ltd. |
| *Crofter* | 21.7.57 | E. B. Stephens | B. W. Jones, A. K. Jones, J. Martin | J. Nicolson | T. & J. Harrison, Ltd. |
| *Cumberland* | 11.9.57 | L. W. Fulcher | G. S. Breen, W. McRae, D. Smith | R. Waters | Federal Steam Navigation Co., Ltd. |
| *Cuzco* | 31.12.57 | R. D. S. Eckford | J. S. Ross, R. M. Attwater, A. B. Powell | V. Dalton | Pacific Steam Navigation Co. |
| *Daleby* | 23.8.57 | H. W. S. Finn | K. B. Singer, A. Duncan, D. Miller | L. G. Broushe | Ropner Shipping Co., Ltd. |
| *Darro* | 5.11.57 | L. T. Peterson | B. W. Roberts, I. Farquahson, P. J. Williams | A. R. Humphries | Royal Mail Lines, Ltd. |
| *Debrett* | 28.10.57 | C. E. Legg | T. Tyson, K. Kotynski, A. Watkin | S. Buttery | Lamport & Holt Line, Ltd. |
| *Deerpool* | 17.1.58 | J. R. Copping | G. Bowman, A. Duncan, J. R. Day | J. T. Garvey | Ropner Shipping Co., Ltd. |
| *Delphic* | 12.11.57 | C. L. Carroll, D.S.C., R.D., Lt.-Cdr. R.N.R. (Retd.) | A. J. Worricker, D. Model, N. Hamilton | E. Moran | Shaw Savill & Albion Co., Ltd. |
| *Deseado* | 26.2.58 | G. S. Grant, R.D., Cdr. R.N.R. (Retd.) | P. Hunter, S. Gibson, P. Brown | G. Camm | Royal Mail Lines, Ltd. |
| *Devon* | 31.12.57 | S. R. Harding | R. J. Bayliss, J. Burn, B. Embleton, C. Whale | D. Gerrard | New Zealand Shipping Co., Ltd. |
| *Devonshire* | 21.1.57 | H. Kerbyson | J. Garroway, J. J. Butterworth, C. Braid, D. J. Bernard | A. Jones | Bibby Bros. & Co. |
| *Dilwara* | 29.1.58 | M. C. Williams | R. G. Macdonald, W. Brown, R. B. Coates, R. J. Elston | S. J. Taylor | British India Steam Nav. Co., Ltd. |

| Name of Vessel | Last Return Received | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
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| *Diomed* | 18.2.58 | W. J. Moore, D.S.C., R.D., R.N.R. .. .. Capt. | D. G. Gelling, D. H. Stewart, I. D. M. Dickson, J. Astles | G. Delves | A. Holt & Co. |
| *Discovery II* | 24.2.58 | S. S. Dalgleish, O.B.E. | J. L. Hayward, G. L. Swanson, M. Corner | L. A. Miller | National Institute of Oceanography |
| *Dominion Monarch* | 20.1.58 | K. D. G. Fisher, G.M. | A. R. Smith, T. Hicks, G. Broom, T. C. Haile, J. Graham | F. V. Harford | Shaw Savill & Albion Co., Ltd. |
| *Donegal* | 1.1.58 | R. F. Hellings | G. K. Green, R. Brown, B. Telfer | J. Ryan | Trinder, Anderson & Co., Ltd. |
| *Dorset* | 15.1.58 | K. Barnett, R.D., Cdr. R.N.R. | I. Slater, R. Youngman, J. Thorpe, H. Crane | T. Green | Federal Steam Navigation Co., Ltd. |
| *Drina* | 4.12.57 | F. S. Swallow | J. V. Marks, G. Rogers, R. Box | O. Wingship | Royal Mail Lines, Ltd. |
| *Duke of Athens* | 21.1.58 | L. W. Loose | W. F. R. Whiting, T. Taylor, S. N. Hurst | K. Dugdale | Trent Maritime Co., Ltd. |
| *Duncraig* | | T. D. MacDonald | A. Anderson, I. Ramsay, W. MacRae | W. Anderson | J. & J. Denholm, Ltd. |
| *Dunedin Star* | 3.1.58 | J. McInnes | R. Young, G. Stubbins, D. McKerrow | P. Geldart | Blue Star Line, Ltd. |
| *Dunera* | 19.3.58 | H. B. W. Cray, M.B.E. | B. Hatton, M. Pudden, R. Monk | T. Holden | British India Steam Nav. Co., Ltd. |
| *Durango* | 19.3.58 | T. W. F. Bolland | J. A. Cox, T. Davies, J. Holt | F. Griffiths | Royal Mail Lines, Ltd. |
| *Durban Castle* | 15.1.58 | R. A. D. Cambridge, D.S.C., R.D., Cdr. R.N.R. (Retd.) | B. J. Bennett, J. Spencer, J. Taylor | D. G. Bristow | Union Castle Mail S.S. Co., Ltd. |
| *Durham* | 14.3.58 | A. Hocken | H. C. Hynard, K. Field, D. Hannah, J. Needham | B. Nutt | Federal Steam Navigation Co., Ltd. |
| *Eden* | 31.12.57 | E. Card | D. Ancona, M. Mortimer, J. Lebrecht | G. Boulden | Royal Mail Lines, Ltd. |
| *Edenfield* | 14.3.58 | A. Harrison | | | Hunting & Son, Ltd. |
| *Edinburgh Castle* | 26.8.57 | H. A. Deller | M. Cooper, —. Daley, —. Kelly | L. Hodgson | Union Castle Mail S.S. Co., Ltd. |
| *Egidia* | 9.10.57 | W. MacVicar, M.B.E. | P. B. Young, N. M. McFarlane, I. C. Graham, R. Gilliland | F. Blyth | Anchor Line, Ltd. |
| *Elysia* | 31.1.58 | D. Barclay | W. Stockley, J. C. Larty, W. Skedd, D. Rattray | R. Prole | Anchor Line, Ltd. |
| *Empire Fowey* | 18.3.58 | L. A. Hill | R. M. Hurst, I. Craig, K. Langton | —. Dawson | P. & O. Steam Navigation Co. |
| *Empire Star* | 18.12.57 | F. N. Johnson | —. Sutcliffe, —. Chivers, —. White | —. Stevenson | Blue Star Line, Ltd. |
| *Empress of Britain* | 10.12.57 | J. P. Dobson, D.S.C., R.D., Cdre. R.N.R. | D. A. Jones, J. Hooley, K. Adams, I. Futter | J. Mann | Canadian Pacific S.S., Ltd. |
| *Empress of England* | 22.1.58 | C. L. de H. Bell, D.S.C., R.D., Cdr. R.N.R. (Retd.) | J. G. Forster, W. Cannell, J. Yeandle-Hignell | C. H. Roberts | Canadian Pacific S.S., Ltd. |
| *Empress of France* | 19.2.58 | W. R. Thorburn | L. O. Brockbank, R. Forbes, D. Burt | P. W. Booth | Canadian Pacific S.S., Ltd. |
| *Endeavour* | 14.2.58 | H. Kirkwood, O.B.E., D.S.C., Capt. R.N. | A. C. Coutts, W. J. Smith, D.S.O., M. J. Pool, D. Scofield | J. Spencer | New Zealand Government |
| *English Star* | 5.2.58 | C. H. Watson | M. B. Foster, R. Thompson, N. Johnson, A. Carter | J. Barnie | Blue Star Line, Ltd. |
| *Eskcliffe* | | R. E. Bennett | R. Melvin, E. Wilburn, S. Briggs | C. Hurg | Esk Shipping Co., Ltd. |
| *Essequibo* | 6.3.57 | A. J. G. Barff, R.D., Cdr. R.N.R. (Retd.) | D. H. McCree, E. J. O'Keefe, N. R. Slacke-Benett, J. S. Barton | P. Snaith | Royal Mail Lines, Ltd. |
| *Essex* | 13.12.57 | S. W. Andrews | J. Rice, C. Masson, B. Smith | L. Sutton | Federal Steam Navigation Co., Ltd. |
| *Essex Trader* | 29.4.57 | R. E. Bennett | J. T. Robinson, I. de Baird, N. J. Bartlett | T. W. Elliott | Trader Navigation Co., Ltd. |
| *Esso Cambridge* | 3.12.57 | K. Goody | J. R. Lewis, J. Richardson, G. N. McFarlane | P. O'Callaghan | Esso Petroleum Company, Ltd. |
| *Esso Canterbury* | 11.3.58 | B. Bater | C. Granger, J. B. Elliot, W. B. Ferguson | J. Ruthven-Murry | Esso Transportation Co., Ltd. |
| *Esso Exeter* | 3.2.58 | L. J. Smith | A. Lees, D. Dunning, D. Maudsley | C. O'Neill | Esso Transportation Co., Ltd. |
| *Esso Manchester* | | J. Francis | D. B. Langwell, I. Campbell, J. Way | | Esso Petroleum Co., Ltd. |
| *Eucadia* | 31.12.57 | A. J. F. Colquhoun, M.B.E. | W. Sawers, J. Scrimgeour, I. Walker | D. Sproat | Anchor Line, Ltd. |
| *Eumaeus* | 25.2.58 | H. C. Large | A. I. Scott, J. Brunskill, M. Furlong, G. M. Hastings | J. C. Wilson | A. Holt & Co. |
| *Explorer* | 1.1.58 | E. A. Bruce | J. Craig | D. Ross | Scottish Home Department |
| *Fanad Head* | 10.4.57 | J. Alexander | G. W. Houston, E. McIntosh, —. Bothwell | L. Harty | Ulster S.S. Co., Ltd. |
| *Fidra* | | R. J. Sinclair | D. R. Christie, A. Macdonald | | Chr. Salvesen & Co. |
| *Flamenco* | 9.8.57 | T. H. McGill | A. G. Corbet, C. Taylor, J. Pepper | J. Sherwood | Pacific Steam Navigation Co. |
| *Fremantle Star* | 14.11.57 | B. G. Taylor | P. Dann, A. M. Stanton, M. R. Hawes | T. J. Rattray | Blue Star Line, Ltd. |
| *Fresno City* | 27.2.58 | J. M. Cox | A. G. Bateley, J. Harris, D. M. Williams | G. T. Walker | Sir William Reardon Smith & Sons, Ltd. |

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| *Geelong Star* | 14.5.57 | J. S. Crowe | E. Bee, B. Sprigings, N. Eadie | N. Poundes — Blue Star Line, Ltd. |
| *Glenartney* | 18.3.58 | H. S. Wood | A. R. Gerrard, J. Burnett, W. A. Cameron, A. E. Longbottom | J. R. Binding — Glen Line, Ltd. |
| *Glenbank* | 10.12.57 | J. Kemp | R. D. Parry, A. Robinson, R. Murray | —. Blaylock — Andrew Weir & Co. |
| *Glenfinlas* | 17.12.57 | F. N. Fisher | D. Davies, O. Cain, R. Grainger | P. D. Glasby — A. Holt & Co. |
| *Glenorchy* | 11.3.58 | —. Sanderson | —. Mattey, —. Malyan, —. McCrindle | R. H. Hill — Glen Line, Ltd. |
| *Gloucester* | 28.2.58 | J. E. Budgell | W. Doodson, C. Hill, M. Cook | P. Leigh — Federal Steam Navigation Co., Lt |
| *Gloucester City* | 3.7.57 | S. G. Smith, O.B.E. | V. Llewellyn, P. W. Doble, D. M. Wilton | N. Brett — Charles Hill & Sons |
| *Golfito* | 25.2.58 | J. Kinsley | J. F. Stuart, D. N. Boon, R. H. Conrathe | P. J. Kelly — Elders & Fyffes, Ltd. |
| *Gothic* | 26.2.58 | L. J. Hopkins | T. T. Salmon, T. Ogier, G. Cairns, B. J. Jeffries | B. McGovern — Shaw Savill & Albion Co., Ltd. |
| *Graig* | 3.3.58 | S. Glyn-Woods | D. H. Griffin, D. Howard, A. R. Dumas | R. K. McNamara — Idwal Williams & Co., Ltd. |
| *Great City* | | S. Leebetter | A. C. Thomas, W. Cross | Sir William Reardon Smith & Sons Ltd. |
| | | J. Tew | | Dene Shipping Co., Ltd. |
| *Halindene* | | | | |
| *Haparangi* | 19.11.57 | D. H. Chadwick | G. Silver, M. Ewens, M. Froud | W. McBurney — New Zealand Shipping Co. |
| *Harpalion* | 1.1.58 | A. R. Phelps | R. Fellowes, J. Higham, —. Hanson | J. & C. Harrison, Ltd. |
| *Hartington* | 9.1.58 | H. Small | L. W. Hagreen, G. D. Brown, R. J. Palmer | G. Houghton — J. & C. Harrison, Ltd. |
| *Hauraki* | 23.5.57 | R. G. Hollingdale | J. F. Anker, G. Silver, P. Lay | R. Sadler — New Zealand Shipping Co., Ltd. |
| *Hector* | 11.2.58 | C. F. Lock | K. Henden, L. Watson, D. Ingham | M. Ward — A. Holt & Co. |
| *Helenus* | 26.11.57 | E. M. Robb | R. Sidley, N. Welden, J. Rose | J. Holeman — A. Holt & Co. |
| *Hertford* | 26.11.57 | H. C. R. Dell | W. E. Gale, J. S. Laidlaw, P. Manson, E. Naisbett | M. W. Hartson — New Zealand Shipping Co., Ltd. |
| *Highland Brigade* | 20.3.57 | P. M. Burrell | R. New, R. Sutton, A. Striger | T. Desboro, M.B.E. — Royal Mail Lines, Ltd. |
| *Highland Chieftain* | 8.7.57 | P. M. Burrell | S. Phillips, I. Park, D. W. Henderson | W. Rollason — Royal Mail Lines, Ltd. |
| *Highland Monarch* | 15.8.57 | H. E. Sang | J. Clark, D. Salt, C. E. Earl, F. Chapman | R. Dunk — Royal Mail Lines, Ltd. |
| *Highland Princess* | 10.3.58 | E. H. Giller, M.B.E. | G. J. Moat, C. Earl, M. S. Jones, A. Smith | F. Goodall — Royal Mail Lines, Ltd. |
| *Hilary* | 23.4.56 | J. H. Stoker | G. Calvert, D. J. Taylor, J. B. Burke | A. Newcombe — Booth S.S. Co., Ltd. |
| *Himalaya* | 12.2.58 | R. G. Freeman | J. H. H. Davies, A. Carodine, C. Smylie | H. A. M. Jardine — P. & O. Steam Navigation Co. |
| *Hinakura* | 5.3.58 | N. L. Warren | P. J. Plaistowe | R. Heath — New Zealand Shipping Co., Ltd. |
| *Hororata* | 14.3.58 | H. R. M. Smith | E. Fawcett, B. J. Pusey, N. J. Rice | A. Harris — New Zealand Shipping Co., Ltd. |
| *Hubert* | 20.5.57 | J. Whayman, D.S.C., R,.D., Capt. R.N.R. | R. E. Collister, H. S. Redshaw, G. W. Walker | F. Fitzgerald — Booth S.S. Co., Ltd. |
| *Huntingdon* | 27.12.56 | P. S. Calcutt | F. R. Wilson, B. Baggot, P. Plumley | T. N. Green — Federal Steam Navigation Co., Ltd. |
| *Hurunui* | 20.1.58 | F. Pover | T. H. Wayatt, B. Austin-Smith, D. Watson | P. Callander — New Zealand Shipping Co., Ltd. |
| *Hyrcania* | 14.6.57 | J. Robertson | H. D. Holburn, N. Parington, J. Seivert | N. Elliss — Baltic Trading Co., Ltd. |
| *Imperial Star* | 23.10.57 | G. L. Evans | A. W. Kinghorn, H. K. Dyer, N. G. Liddle | D. M. Whitehead — Blue Star Line, Ltd. |
| *Inishowen Head* | 29.11.57 | H. N. Clarke | N. W. G. Walsh, E. W. McIntosh, J. Stevens | A. E. Adams — Ulster S.S. Co., Ltd. |
| *Interpreter* | 31.12.57 | W. Weatherall | J. R. Willan, W. Embleton, R. Tasker | J. Nicholson — T. & J. Harrison, Ltd. |
| *Ivernia* | 17.2.58 | J. A. Armstrong, D.S.C., R.D., Lt.-Cdr. R.N.R. (Retd.) | A. J. Foster, R. Howard, W. Craig | F. Brown — Cunard Steamship Co., Ltd. |
| *Ixion* | 14.3.58 | G. Edge | M. J. Steele, G. I. Wright, J. C. Brane-Hartnell, R. J. Atkinson | W. W. Beebee — A. Holt & Co. |
| *Jamaica Producer* | 16.9.57 | G. E. M. Jenkins | M. S. Middleton, T. Kidd, M. Belcher, J. A. Stringer | —. Sheen — Kaye, Son & Co., Ltd. |
| *Jason* | 4.3.58 | W. K. Hole | C. J. Boyes, M. J. Glover, E. S. Mathews | I. T. Davies — A. Holt & Co. |
| *John Biscoe* | | W. Johnston | J. P. Morley, R. Le Pivert, M. S. Smith | R. Molland — Falkland Islands Government |
| *John Holt* | 11.6.57 | J. G. Jones | R. A. Willison, D. Edwards, J. H. Birch | R. H. Richards — Guinea Gulf Line, Ltd. |
| *Journalist* | 27.2.58 | D. Wolstenholme | R. Harvey, J. C. Chambers, D. J. Smith | P. Gaulden — T. & J. Harrison, Ltd. |
| *Kenilworth Castle* | 4.2.58 | J. P. Aplin | R. A. Elbra, P. Sheridan, R. E. Bestel | G. B. Holyoake — Union Castle Mail S.S. Co., Ltd. |
| *Kenuta* | 22.1.58 | R. K. C. Thomas | R. J. Davies, R. T. Riley, G. R. Dewsnap | R. T. Roberts — Pacific Steam Navigation Co. |
| *King Robert* | 20.3.58 | W. H. Keith | K. George, A. Crawford, J. Jeffrey | T. Sullivan — King Line, Ltd. |
| *King William* | 8.11.57 | G. A. Russ | J. G. Duncan, A. S. Grant, I. Miles | King Line, Ltd. |
| *Kohistan* | 30.10.57 | T. Shields | K. Hughes, C. A. Patterson, T. H. Brain | J. F. Kerr — F. C. Strick & Co., Ltd. |
| *Koyan* | 26.11.57 | M. F. M. Fair | H. C. Swanson, W. Macintosh | S. Macrae — P. Henderson & Co., Ltd. |
| *Lalande* | 26.11.57 | E. D. Spooner | A. Jones, R. P. Willis, W. A. Wilson | Lamport & Holt Line, Ltd. |
| *Lanarkshire* | 12.11.57 | R. B. Linsley | P. W. Vaughan, J. A. Baxter, A. Porter | L. Cameron — Clan Line Steamers, Ltd. |
| *Langton Grange* | 24.1.57 | J. R. Faulkner | D. W. Luff, N. Foot, N. Roberts | T. O'Shea — Houlder Bros. & Co., Ltd. |

| Name of Vessel | Last Return Received | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
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| *Laurentia* | 5.3.58 | T. S. Graham | 1. B. McLundie, A. D. McCallum, W. G. Cullen, J. Beaton | D. Murray | Donaldson Bros. & Black, Ltd. |
| *Leicestershire* | 5.3.58 | H. P. Peate, D.S.C., R.D., Capt. R.N.R. | H. A. Bonsor, J. W. Waldie, D. Clayton | J. E. Unsworth | Bibby Bros & Co. |
| *Levernbank* | 21.2.58 | R. A. Leach | R. W. Lorains, G. T. Gibson, G. C. Andoe | J. T. Manford | Andrew Weir & Co., Ltd. |
| *Limerick* | 27.1.58 | C. Parry | J. F. Holder, H. G. Chafer, N. Warwick | H. Hare | Trinder, Anderson & Co. |
| *Linguist* | 31.12.57 | C. S. Boam | J. Lundberg, J. Bean, R. I. Ward | R. Roberts | T. & J. Harrison, Ltd. |
| *Lismoria* | 3.9.57 | J. L. McQueen | A. McLean, W. F. Joyce, T. Gorbett | J. Limpitlaw | Donaldson Line, Ltd. |
| *Livorno* | 3.3.58 | F. A. Firth | B. Gash, J. Chafer, M. Salsbury | R. Townsend-Rose | Ellerman's Wilson Line, Ltd. |
| *Loch Avon* | 21.1.58 | G. M. Fletcher | J. T. Duff, C. Sturcke, —. Griffiths | J. Greenlagh | Royal Mail Lines, Ltd. |
| *Loch Garth* | 29.10.57 | G. S. Grant, R.D., Cdr. R.N.R. (Retd.) | S. F. W. Phillips, R. J. Brockbank, M. H. Hobbs | F. Page | Royal Mail Lines, Ltd. |
| *Loch Gowan* | 30.10.57 | F. A. C. Thacker | J. A. G. Arnott, R. N. Miller, R. N. D. Hobson | D. Stevenson | Royal Mail Lines, Ltd. |
| *Loch Ryan* | 3.1.58 | W. S. Thomas | J. McCaughrean, C. J. Oxborrow, B. C. Burch | W. Churchman | Royal Mail Lines, Ltd. |
| *London Pride* | 8.8.57 | G. Fox | G. A. Yates, M. Godfrey, P. Ellwood | R. Greeg | London Overseas Freighters, Ltd. |
| *Lotorium* | 13.1.56 | N. Clarke | A. Rossouw, B. Lloyd, D. H. White | B. I. D. Mellors | Shell Tankers, Ltd. |
| *Macharda* | 24.2.58 | H. F. Scoins | J. J. H. Stephenson, J. J. Redder, J. C. Boyce, D. J. Lorimer | A. Turner | T. & J. Brocklebank, Ltd. |
| *Magdapur* | 13.3.58 | J. P. Jackson | A. Warren, J. Long, A. Wilkinson, A. Dunster | B. Beecham | T. & J. Brocklebank, Ltd. |
| *Mahanda* | 7.1.58 | J. B. Newman | T. G. H. Foulkes, W. L. L. Williams, P. D. Peters | S. B. Lee | T. & J. Brocklebank, Ltd. |
| *Mahseer* | 3.3.58 | A. Hill, O.B.E. | R. A. Evans, J. Lyle, R. Owen | B. J. Smith, M.B.E. | T. & J. Brocklebank, Ltd. |
| *Makalla* | 24.10.57 | H. Scurr, M.B.E. | M. T. L. Woodcroft, H. Evans, E. L. Jackson | E. T. Williams | T. & J. Brocklebank, Ltd. |
| *Malancha* | 19.11.57 | J. G. Nuttall | D. R. Bond, C. P. Margeson, P. M. Ireland | J. Guthrie | T. & J. Brocklebank, Ltd. |
| *Malayan Prince* | 30.10.57 | G. G. Rich, M.B.E. | M. L. Block, C. J. Redman, A. King | D. Briggs | Prince Line, Ltd. |
| *Manchester City* | 17.2.58 | W. Hine, R.D., Cdr. R.N.R. | N. D. Baker, D. Williams, J. Froggatt | J. Kane | Manchester Liners, Ltd. |
| *Manchester Explorer* | 3.9.57 | J. E. Askew | J. Williamson, A. G. Rowlands, G. B. Hannford | D. Hodgson | Manchester Liners, Ltd. |
| *Manchester Mariner* | 17.1.57 | E. W. Raper | A. S. Bashford, K. Rourke, H. Lynn | M. Doran | Manchester Liners, Ltd. |
| *Manchester Merchant* | 28.3.58 | W. H. Downing | T. Hood, P. Fielding, J. M. Brook | A. J. S. Broadbent | Manchester Liners, Ltd. |
| *Manchester Pioneer* | 28.1.57 | A. Starmer | W. Boyle, P. Cullen, G. Harfood | J. Buchanan | Manchester Liners, Ltd. |
| *Manchester Port* | 17.12.57 | J. L. McLaren | S. Simpson, N. W. Cockshoot, S. Smith | T. Berry | Manchester Liners, Ltd. |
| *Manchester Progress* | 28.5.57 | M. Bewley | D. R. Nutton, D. W. Hopkinson, J. D. Holdon, A. Swan | J. Buchanan | Manchester Liners, Ltd. |
| *Manchester Prospector* | 6.6.56 | G. R. Thompson | J. I. Illingworth, J. Low, N. T. Davies | W. B. McPherson | Manchester Liners, Ltd. |
| *Manchester Regiment* | 31.12.57 | F. Downing | F. G. Owbridge, D. Thomas, K. Lehepow | F. McLaughlin | Manchester Liners, Ltd. |
| *Manchester Shipper* | 22.10.56 | H. Hanock | R. Sooton, P. Humphries, L. Taylor | W. Critchley | Manchester Liners, Ltd. |
| *Manchester Spinner* | 21.1.58 | J. E. Askew | M. W. Kipling, V. Matthews, A. Copeland | J. Reid | Manchester Liners, Ltd. |
| *Manchester Trader* | 29.7.57 | E. W. Espley | J. Rimmer, J. Baker, A. Cowell | R. Williams | Manchester Liners, Ltd. |
| *Manchester Vanguard* | 8.2.57 | W. E. Quirk, R.D., Cdr. R.N.R. | A. G. Copeland, —. Tester, N. W. Cockshoot | D. Spooner | Manchester Liners, Ltd. |
| *Manchester Venture* | 13.5.57 | J. E. Jones | M. McKay, N. Storr, J. M. Rushworth | B. Fitzgerald | Manchester Liners, Ltd. |
| *Mandasor* | 10.2.58 | S. E. Turner | D. Evans, A. C. Sprigings, D. M. Bell | G. Stoddart | T. & J. Brocklebank, Ltd. |
| *Manistee* | 6.11.57 | W. Young | J. Stuart, R. Williams, G. N. Foster, T. Hancock | W. Murray | Elders & Fyffes, Ltd. |
| *Marabank* | 18.2.58 | C. G. Watterson | W. Mottram, R. Lescombe, J. K. Matthias | J. Fahy | Andrew Weir & Co., Ltd. |
| *Marengo* | 16.1.58 | D. A. Stokes | J. Crossley, F. Smith, J. Guilliatt | W. Laing | Ellerman's Wilson Line, Ltd. |
| *Markhor* | 19.2.57 | C. B. Thomas | —. Pears, J. T. Kirkham, P. Davie | —. McPherson | T. & J. Brocklebank, Ltd. |
| *Martand* | 14.8.57 | T. C. Eddy | P. W. Colville, D. L. des Landes, D. Wild | G. Hazell | T. & J. Brocklebank, Ltd. |
| *Martita* | 20.2.58 | H. Bunn | D. Clifford, W. J. Hunter, E. H. Erskine | W. A. E. Waugh | Kaye, Son & Co., Ltd. |
| *Matheran* | 10.12.57 | H. Simpson | C. D. Croall, A. M. Ward, P. R. Owen | J. Shepherd | T. & J. Brocklebank, Ltd. |
| *Matina* | 19.12.57 | W. G. Lock | A. Booth | A. C. Knight | Elders & Fyffes, Ltd. |
| *Mauretania* | 17.6.57 | A. Mackellar, R.D., Cdre. R.N.R. | H. L. Ashcroft, R. Howard, H. Dove, M. Dormer, L. Porter | J. Connock | Cunard Steamship Co., Ltd. |

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| *Media* | 3.12.57 | J. T. Jones, R.D., Capt. R.N.R. | R. J. Ogilvy, R. G. Southern, T. A. Bell | R. O. Hopkins — Cunard Steamship Co., Ltd. |
| *Melbourne Star* | 3.3.58 | A. Penrice | F. Coulson, R. C. Cameron, J. Wilson | E. P. Dowdall — Blue Star Line, Ltd. |
| *Middlesex* | 18.3.58 | I. C. Davidson | L. Money, A. Stalker, C. Jones, A. Jackson | E. Barley — Federal Steam Navigation Co., Ltd. |
| *Monarch* | 21.10.57 | J. P. F. Betson, O.B.E. | I. J. L. Lang, P. V. Flynn, D. W. Alford | T. Tilly — H.M. Postmaster-General |
| *Monmouthshire* | 4.2.58 | H. S. Clarke | N. Bolland, A. Lane, J. C. Creer | C. Knibb — Glen Line, Ltd. |
| *Montreal City* | | F. W. Harris | B. Rees, E. Mace, M. Dawson | A. Chappell — Charles Hill & Sons |
| *Muristan* | 28.11.57 | E. E. Dunn | E. Cairns, J. E. Ockleford, I. L. C. Thomas | J. Short — F. C. Strick & Co., Ltd. |
| *Myrtlebank* | 12.8.57 | A. C. Hough | S. Cutlack, D. McCaffery, J. Haig | A. Davies — Andrew Weir & Co., Ltd. |
| *Napier Star* | 29.10.57 | R. H. Stark | D. R. McWhan, R. H. Dawson, G. C. Williams | J. S. Kinnaird — Blue Star Line, Ltd. |
| *Naticina* | 13.12.57 | A. McLean | I. V. Bole, R. L. Dixon, H. R. Smith | R. J. Ward — Shell Tankers, Ltd. |
| *Nestor* | 6.3.58 | E. W. Studley | J. R. Jones, E. Stubbins, M. Smith, M. J. Hollyfield | H. Roberts — A. Holt & Co. |
| *Newfoundland* | 20.8.57 | C. H. Kenyon | K. Swinburn, C. Wales, B. Waters | J. Keegan — Furness, Withy & Co., Ltd. |
| *New York City* | 12.11.57 | A. L. Webb, O.B.E. | G. J. Harfoot, S. Dickens | A. Brookes — Charles Hill & Sons |
| *New Zealand Star* | 30.10.57 | E. Jermyn | N. Hardie, I. Hay, R. Methuen | T. Morrison — Blue Star Line, Ltd. |
| *Nordic* | 3.12.57 | F. S. Thornton, O.B.E. | D. Milburn | R. Drake — Prince Line, Ltd. |
| *Norfolk* | 3.3.58 | D. A. G. Dickens, Lieut. R.N.R. | E. G. Dixon, M. Field, J. Hume, D. Moran | J. Bilton — Federal Steam Navigation Co., Ltd. |
| *Norseman* | 27.1.58 | P. Garrett | T. Archer, E. Small, J. Fenwick | P. J. Soper — Cable & Wireless, Ltd. |
| *Nottingham* | 1.11.57 | F. G. Bevis | F. F. Michael, R. Hales, P. Egan, N. MacIver | A. Wake — New Zealand Shipping Co., Ltd. |
| *Nova Scotia* | 3.12.57 | J. E. Wilson, O.B.E. | E. W. Foxworthy, J. Ransome, J. Marsh | W. C. Brock — Furness, Withy & Co., Ltd. |
| *Novelist* | 26.7.57 | R. F. Longster | B. C. Roberts, T. Baxendale, R. W. Eastaugh | J. Jackson — T. & J. Harrison, Ltd. |
| *Obuasi* | 29.7.57 | J. A. Brooke | D. B. Parnum, I. Bease, R. W. Gibson | G. Barlow — Elder Dempster Lines, Ltd. |
| *Ocean Layer* | | J. Marshall | H. L. R. Harper, D. Angus, G. Gowan, E. George | — Submarine Cables, Ltd. |
| *Oilfield* | 17.2.57 | W. S. Boyd | J. B. Sample, J. A. Conlon, J. Betts | P. Shine — Hunting & Son, Ltd. |
| *Orari* | 8.3.57 | J. R. M. Ramsey, Lt.-Cdr. R.N. (Retd.) | W. G. Dick, R. S. Shannon, B. Foster, J. A. North | T. A. Batte — New Zealand Shipping Co., Ltd. |
| *Orcades* | 19.11.57 | C. K. Blake, O.B.E. | D. P. Postlethwaite, T. McCarthy, G. Munson | F. W. Miller — Orient Steam Navigation Co., Ltd. |
| *Orion* | 5.11.57 | J. D. Birch, D.S.C., R.D., Cdr. R.N.R. | W. J. Denly, B. Pickering, W. R. Burt | D. Macrae — Orient Steam Navigation Co., Ltd. |
| *Oronsay* | 17.2.58 | R. W. Roberts, O.B.E., D.S.C. | G. B. Robinson, G. B. Guffie, T. R. Williams | R. Oakley — Orient Steam Navigation Co., Ltd. |
| *Orontes* | 23.1.58 | C. W. C. Pinckney, O.B.E., R.D., Cdr. R.N.R. (Retd.) | B. Wells, J. Field, R. Mattingley, D. Gaffney, D. Hughes | M. Palmer — Orient Steam Navigation Co., Ltd. |
| *Orsova* | 31.12.57 | N. W. Smith | J. B. Jones, E. Whitehead, B. O'Sullivan | F. Harron — Orient Steam Navigation Co., Ltd. |
| *Otaki* | 5.12.57 | J. D. Bennett | E. J. Norman, W. F. Dan, M. Bosworth, A. E. Robinson | A. MacInnes — New Zealand Shipping Co., Ltd. |
| *Oxfordshire* | 31.12.57 | N. F. Fitch, M.B.E. | R. B. Calvert, R. Weir, M. Odgers | A. Rodger — Bibby Bros. & Co. |
| *Pacific Fortune* | 15.1.57 | H. A. Shaw | H. R. Howell, J. S. Jones, A. B. Smith | J. R. M. Thomas — Furness, Withy & Co., Ltd. |
| *Pacific Northwest* | 29.11.57 | A. H. Cooke | K. M. Scollay, D. F. Montague, R. C. Cartwright | T. Thomasson — Furness, Withy & Co., Ltd. |
| *Pacific Reliance* | 16.1.58 | P. F. Owens | D. J. Bremner, R. J. Newling, M. McDowell | A. Hemlin — Furness, Withy & Co.. Ltd. |
| *Pacific Unity* | 19.2.58 | C. G. Killock | D. A. Whitaker, E. Darnell, D. Olsen | F. O'Shea — Furness, Withy & Co., Ltd. |
| *Pacuare* | 2.9.57 | J. Nicholson | G. B. Saunders, A. Both, J. Beatson | H. Roderick — Elders & Fyffes, Ltd. |
| *Pampas* | 7.2.57 | L. T. Petersen | P. J. Williams, R. J. Kistler, A. G. Arnott | W. Macarthy — Royal Mail Lines, Ltd. |
| *Papanui* | 14.8.57 | H. J. Heron | M. Wood, J. Hale, M. Hill | M. Guy — New Zealand Shipping Co., Ltd. |
| *Paparoa* | 19.4.56 | F. M. Williamson, Lieut. R.N.R. | I. M. Pears, J. Hannah, I. M. Charlesworth, D. Jackson | I. Morrison — New Zealand Shipping Co., Ltd. |
| *Paraguay* | 4.6.57 | W. J. Phillips | P. W. L. Ramage, T. Milner, E. Long | J. A. Bell — Royal Mail Lines, Ltd. |
| *Paraguay Star* | 28.11.57 | L. Vernon | R. Westrip, R. Gibb, T. Carter | J. H. Martin — Blue Star Line, Ltd. |
| *Pardo* | 14.6.57 | W. A. Kennedy | A. Hanily, P. T. Shephard, M. R. Griffiths | F. O'Callaghan — Royal Mail Lines, Ltd. |
| *Parima* | 25.9.57 | G. A. Gibbons | L. H. Hall, D. Hatton, R. L. Collins | J. N. Wright — Royal Mail Lines, Ltd. |
| *Parthia* | 10.2.58 | J. Crosbie Dawson, D.S.C., R.D., Cdr. R.N.R. (Retd.) | P. Walton, C. C. Walker, D. J. Roberts | A. O'Sullivan — Cunard Steamship Co., Ltd. |
| *Perim* | 26.3.58 | A. G. Stansfield | J. Cochrane, P. E. Hayward, H. S. Mackie | T. Twomey — P. & O. Steam Navigation Co. |
| *Perthshire* | 19.9.57 | D. L. Wilson | K. R. Hogg, J. A. Riach, A. G. Simmons | J. Pattie — Turnbull, Martin & Co., Ltd. |
| *Pilcomayo* | 8.11.57 | W. B. Avison | J. A. Philip, J. Hunt, D. S. Guinness | A. McCormick — Royal Mail Lines, Ltd. |
| *Pipiriki* | 16.1.58 | A. C. Davies | I. W. Stirling, R. E. C. Cooke, R. B. Blood, J. B. Blamey | D. W. Field — New Zealand Shipping Co., Ltd. |
| *Pizarro* | 14.8.57 | P. L. Hockey | F. Nuttall, D. J. Houghton, C. Farnworth, —. Pearson | G. L. Jones — Pacific Steam Navigation Co. |

| Name of Vessel | Last Return Received | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
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| *Planter* | 14.5.57 | W. Williams | K. Watson, F. J. Bowley, J. W. Chatfield | J. Larkin | T. & J. Harrison, Ltd. |
| *Port Adelaide* | 4.2.58 | V. G. Battle | D. S. Taylor, M. H. C. Twomey, G. J. Botterill | T. Philips | Port Line, Ltd. |
| *Port Brisbane* | 25.3.58 | F. W. Bailey, M.B.E. | D. Dixon, A. Gough, P. Hanley | J. Sherwood | Port Line, Ltd. |
| *Port Dunedin* | 26.11.57 | P. A. N. Thomas | D. J. North, W. J. North, P. A. Rayner | T. A. Cameron | Port Line, Ltd. |
| *Port Hardy* | 3.12.57 | A. N. Williamson | F. G. Gurney, I. G. Clarke, R. M. Ellison | G. C. Talbot | Bibby Bros. & Co., Ltd. |
| *Port Hobart* | 14.2.58 | F. J. Lavers | J. H. Cole, J. D. C. Tainsh, R. J. Jenkins | J. Powell | Port Line, Ltd. |
| *Port Jackson* | 31.12.57 | L. W. Cady | J. Mackinnon, J. C. Naylor, D. H. Kilner | E. Loft | Port Line, Ltd. |
| *Port Launceston* | 7.3.58 | W. Eastoe | M. F. Annett, D. J. Orr, A. Roberts | T. Melville | Port Line, Ltd. |
| *Port Lincoln* | 13.2.58 | C. J. H. Gorley | D. Hart, P. B. Griffiths, A. G. A. Collison | G. Clarke | Port Line, Ltd. |
| *Port Macquarie* | 24.3.58 | R. A. Holmes | B. Le Leivre, C. Kaye, G. Hay | G. Cavaye | Port Line, Ltd. |
| *Port Napier* | 15.11.57 | P. S. Ball | A. T. Moody, A. Hogarth, R. J. Gollogly | T. Hargrave | Port Line, Ltd. |
| *Port Phillip* | 27.3.58 | W. B. Craig | J. A. Cullen, J. Burt | V. Whardington | Port Line, Ltd. |
| *Port Pirie* | 21.10.57 | W. J. Williams | J. R. Bell, D. E. Kemp, M. R. Haslam | H. J. Roberts | Port Line, Ltd. |
| *Port Townsville* | 26.11.57 | L. J. Skailes | D. J. Turner, J. R. Dit-Leschery, D. J. Campbell | K. A. Makin | Port Line, Ltd. |
| *Port Victor* | 21.10.57 | J. S. Moate | C. L. Baldam, D. I. Pull, P. H. Goldberg | J. MacMillan | Port Line, Ltd. |
| *Port Vindex* | | E. E. Roswell | B. Ching, A. Reed, J. R. Dit-Leschery | J. Hudson | Port Line, Ltd. |
| *Port Wanstead* | 19.9.57 | I. Jackson | D. J. Cunningham, W. Anderson, J. Coogans | K. Lax | Watts, Watts & Co., Ltd. |
| *Port Wellington* | 31.12.57 | A. J. Hawkins | I. Collier, M. S. Rose, T. Howe | J. Macpherson | Port Line, Ltd. |
| *Port Wyndham* | 29.8.57 | J. Stannard | F. J. Edwards, A. Snow, J. Whyte | D. Bray | Port Line, Ltd. |
| *Potaro* | 31.12.57 | C. Robertson | R. Rogers, P. Campbell, F. Morton | D. N. Ripley | Royal Mail Lines, Ltd. |
| *Potosi* | 15.11.57 | D. I. Jones, D.S.C., R.D., Cdr. R.N.R. (Retd.) | T. Wake, P. Whittaker, W. D. Hughes | C. C. Weeks | Pacific Steam Navigation Co. |
| *Pretoria Castle* | 13.1.58 | G. H. Mayhew | K. J. Barry, J. Lane | P. Williams | Union Castle Mail S.S. Co., Ltd. |
| *Prospector* | 3.12.57 | W. Lawton | C. D. Riley, W. Johnston, P. Potter | D. Brown | T. & J. Harrison, Ltd. |
| *Queensland Star* | 18.3.58 | R. White, D.S.C. | E. Bee, D. Greenland, R. Barratt | R. Thompson | Blue Star Line, Ltd. |
| *Rakaia* | 5.11.57 | H. N. Lawson, R.D., Capt. R.N.R. | D. Hyde, I. Excell, D. Watt | P. Broome | New Zealand Shipping Co., Ltd. |
| *Ramillies* | 28.3.58 | W. J. Thomas | D. G. Petvin, G. W. Crossley, G. Freiburgs | R. Milner | John Cory & Sons, Ltd. |
| *Ramore Head* | 24.10.57 | W. A. Haddock, O.B.E. | R. J. Crawford, J. McD. Knox, A. W. Burns | J. Lyons | Ulster S.S. Co., Ltd. |
| *Ramsay* | 5.12.57 | B. F. Thomas | M. W. England, B. Lillivick, P. Palreman | Z. T. Fogl | Bolton Steam Shipping Co., Ltd. |
| *Rangitane* | 17.2.58 | R. G. Rees | J. Withington, D. Thomas, J. Thomson, D. Marris | L. Whittington | New Zealand Shipping Co., Ltd. |
| *Rangitata* | 14.2.58 | E. H. Hopkins | A. Carver, R. Michael, I. Rankin, W. Davidson | G. Parker | New Zealand Shipping Co., Ltd. |
| *Rangitiki* | 27.11.57 | A. E. Lettington, O.B.E., D.F.C. | T. T. Evans, B. W. Anstey, T. Stickler, C. Turner | C. L. Lambe | New Zealand Shipping Co., Ltd. |
| *Rangitoto* | 16.1.58 | P. S. Calcutt | R. Barton, H. Hynard, J. McCarthy, J. Hutson | W. Shepherd | New Zealand Shipping Co., Ltd. |
| *Rathlin Head* | 29.4.57 | M. Kennedy | T. McHanill, C. E. Pringle, W. Teal | E. Heywood | Ulster S.S. Co., Ltd. |
| *Regent Hawk* | 19.12.57 | G. H. Hobson | R. J. Peters, E. Taylor, N. Baird | H. J. Doherty | Regent Petroleum Tankship Co., Ltd. |
| *Regent Royal* | 31.12.57 | R. Armstrong | J. S. Beard, R. Brooker, S. S. Jenkins | J. Bissicks | Regent Petroleum Tankship Co. Ltd. |
| *Reina Del Mar* | 12.2.58 | A. G. Litherland | D. J. Bishop, T. Low, J. Smith | T. F. Hurley | Pacific Steam Navigation Co. |
| *Reina del Pacifico* | 8.8.57 | E. C. Hicks | A. Corbett, B. Tyrer, J. Bruce, A. Gordon | T. Tynan | Pacific Steam Navigation Co. |
| *Retriever* | 18.3.57 | J. G. West | D. Silwood, P. Watts, M. Simmons | —. Fitzsimmons | Cable & Wireless Co., Ltd. |
| *Reynolds* | 10.2.58 | J. C. Pratt | H. R. Hall, G. Brown, T. G. Lewis | J. B. Burns | Bolton Steam Shipping Co., Ltd. |
| *Rialto* | 1.1.58 | H. Greenhill | P. Tate, J. Bradley, D. Brackenbury, A. Hodson, D. Smee, B. Nicolle | A. Pulsford | Ellerman's Wilson Line, Ltd. |
| *Richmond Castle* | 5.4.57 | T. M. Lycell | R. H. Mason, T. L. White, R. B. Warn | G. W. Dunnett | Union Castle Mail S.S. Co., Ltd. |
| *Rippingham Grange* | 27.1.58 | A. McEwan | A. Millie, M. Jenkins, G. Metcalf | A. G. H. Phail | Houlder Bros. & Co., Ltd. |
| *River Afton* | 3.12.57 | J. P. Johnson | D. Wilson, J. W. Armstrong, J. K. Frost | W. McCarthy | Mungo Campbell & Co., Ltd. |
| *Rivercrest* | | L. Jamieson | M. Waylen, A. Henderson, P. Georges | D. Blackburn | Crest Shipping Co., Ltd. |
| *Rochester Castle* | 24.1.58 | G. D. Fowler, R.D., Lt.-Cdr. R.N.R. | R. G. Marsh-Feiley, C. R. Kelso, P. Jackson | | Union Castle Mail S.S. Co., Ltd. |

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| *Romanby* | | J. R. Copping | | | Ropner Shipping Co., Ltd. |
| *Romanic* | 19.12.57 | C. H. Phillips | J. H. Porter, G. C. Murray, D. F. Brewer | J. Twomey | Bolton Steam Shipping Co., Ltd. |
| *Roonagh Head* | 5.3.58 | E. W. Black, O.B.E. | G. W. Houston, E. Seaton, G. Clint | J. Savage | Ulster S.S. Co., Ltd. |
| *Roscommon* | 10.12.57 | M. R. Foster | M. L. Ingle, J. W. Johnston, T. M. Dene | D. F. Drage | Trinder, Anderson & Co., Ltd. |
| *Rowallan Castle* | 22.1.58 | C. E. Lorains | A. D. Foulkes, T. N. Geesin, C. G. White | R. Gill | Union Castle Mail S.S. Co., Ltd. |
| *Roxburgh Castle* | 31.12.57 | C. W. Armstrong, R.D., Cdr. R.N.R. | D. France, F. J. Pigeon, R. J. Marchmont | P. Hull | Union Castle Mail S.S. Co., Ltd. |
| *Ruahine* | 18.3.58 | F. Lougheed | A. Aston, P. Sedgwick, J. Crowder, R. Jackson | J. Heath | New Zealand Shipping Co., Ltd. |
| *Runa* | 31.12.57 | J. Gilfillan | R. M. Gray, T. Mitchell | A. Corless | Glen & Co., Ltd. |
| *Runic* | 31.12.57 | C. W. Sendall | J. H. Hedley, A. N. Newman, A. W. Glassey | A. McMurray | Shaw Savill & Albion Co., Ltd. |
| *Runswick* | 5.4.58 | J. S. Pinkney, O.B.E. | J. Conn, S. Ward, M. L. Morton | A. N. Marsden | Headlam & Son |
| *Sacramento* | 7.1.58 | W. White | R. W. Jones, H. Edwards, C. B. Batty | W. Luing | Ellerman's Wilson Line, Ltd. |
| *Saint John* | 28.10.57 | F. Meneight | D. Roberts, H. Bulmer, A. Phillips, W. Pratt | J. Conway | South American Saint Line, Ltd. |
| *Salacia* | 8.11.57 | G. M. Clark | F. K. Davies, A. Johnson, J. Carney | M. Prior | Donaldson Line, Ltd. |
| *Salamanca* | 3.12.57 | A. Lyall | A. Craig, W. A. E. Johnston, B. Glen | P. Argumont | Pacific Steam Navigation Co. |
| *Salaverry* | 13.12.57 | R. B. Bryant | D. B. Bird, W. A. Washington, C. Rowntree | L. Sutton | Pacific Steam Navigation Co. |
| *Salinas* | 1.7.57 | A. B. Powell | C. A. Hilton, H. Cunliffe, W. Bolitho | J. Power | Pacific Steam Navigation Co. |
| *Salween* | 10.2.58 | K. S. Marsh | D. B. Watt, S. A. McInnes, J. A. Reid | W. Allen | P. Henderson & Co. |
| *Sansu* | 20.11.57 | A. Ness | P. Northway, —. Bickerten, P. R. Byrne, P. Bowman | | Elder Dempster Lines, Ltd. |
| *Santander* | 20.2.57 | F. T. Leicester | R. I. Hunter, J. T. Bruce, D. J. Good | J. Whitfield | Pacific Steam Navigation Co. |
| *San Velino* | 30.5.57 | R. R. Griffith | K. Bramley, D. A. Doyle, R. S. Rook | H. Playford | Eagle Oil & Shipping Co., Ltd. |
| *San Veronico* | 20.12.57 | K. E. Spencer | R. C. Page, L. J. Coutts, R. A. Johnston | M. J. Elsworth | Eagle Oil & Shipping Co., Ltd. |
| *San Vulfrano* | 12.2.57 | T. B. Wright | P. W. Hodges, J. F. B. Ridout, W. Atken | D. J. Brown | Eagle Oil & Shipping Co., Ltd. |
| *Sarmiento* | 17.6.57 | P. B. Potts | M. Hetherington, J. Jenkins | F. Mathews | Pacific Steam Navigation Co. |
| *Saxonia* | 3.12.57 | E. A. Divers, O.B.E., R.D., Cdr. R.N.R. | L. W. Crump, T. R. Buckingham | E. P. Bishop | Cunard Steamship Co., Ltd. |
| *Saxon Star* | 24.1.58 | C. A. Holleyoak | J. Gathercole, J. Moreland, K. Morris | W. Smyth | Booth S.S. Co., Ltd. |
| *Scottish Eagle* | 22.1.58 | A. M. Kennedy | C. S. Noughton, P. R. Will, T. M. Connolly | B. Lees | Scottish Tanker Co., Ltd. |
| *Seattle Star* | 2.1.58 | G. Bowden | G. Pigott, G. Dennison, C. Churcher | W. Long | Blue Star Line, Ltd. |
| *Selector* | 3.2.58 | C. C. Heaton | T. G. Oxley, J. M. Doran, J. Stenanson | T. Collins | T. & J. Harrison, Ltd. |
| *Settler* | 5.4.57 | H. G. Skelly | R. L. Hammond, F. V. Scriven, P. Clements | R. Roy | T. & J. Harrison, Ltd. |
| *Shackleton* | 1.6.56 | W. Johnston | T. Woodfield, A. Kerr, T. Flack | R. E. Molland | Falkland Islands Dependencies Survey |
| *Sir William Hardy* | | J. Munro | S. Ribee, M. Slater | S. Ribee | Torry Research Station |
| *Socotra* | 15.1.58 | W. H. Waghorn | I. Gibb, J. Slee, C. S. Bradley | H. Williams | P. &. O. Steam Navigation Co. |
| *South Africa Star* | 25.2.58 | R. S. Hopper, D.S.C., Lt.-Cdr. R.N. (Retd.) | A. Francombe, I. Tait, L. Graham | E. Marks | Blue Star Line, Ltd. |
| *Southern Cross* | 25.2.58 | L. H. Edmeads | R. Fulford-Dobson, W. Newport, S. Carr, A. Reed, R. Dyer, M. Holleyoak | H. Mathens | Shaw Savill & Albion Co., Ltd. |
| *Southern Garden* | | J. Ross | W. N. H. Anderson | | Chr. Salvesen & Co. |
| *Southern Harvester* | 11.5.57 | L. Bartho | W. Holbu, W. Sinclair, J. B. Kerr | A. Turnbull | Chr. Salvesen & Co. |
| *Southern Opal* | 18.5.57 | A. F. Baikie | H. Thomson, D. I. Polson, G. A. Walterson | T. Johnson | Chr. Salvesen & Co. |
| *Southern Satellite* | 21.3.57 | W. Swanson | D. Watt, N. McLean, J. G. Wilson | P. Curson | Chr. Salvesen & Co. |
| *Southern Venturer* | 1.5.57 | H. Myhre | K. Snekkestad, D. Jensen, G. Vikklander | J. Macmorran | Chr. Salvesen & Co. |
| *Stirling Castle* | 12.11.57 | J. F. Oakley | A. T. C. Millns, G. Wood, S. Davies | J. Summers | Union Castle Mail S.S. Co., Ltd. |
| *Stirlingshire* | 22.8.57 | S. W. Brown | D. Paterson, D. Geddes, B. Mockley, P. Ward | W. Latus | Turnbull, Martin & Co., Ltd. |
| *Strathaird* | 30.4.57 | —. Slinn | P. E. Hayward | J. F. Clark | P. & O. Steam Navigation Co. |
| *Stratheden* | 13.6.57 | K. A. H. Cummins | P. Beeley, P. J. Stock, D. V. Bates | P. Moloney | P. & O. Steam Navigation Co. |
| *Strathmore* | 7.8.57 | H. P. Mallet | J. H. Daniel, C. J. Jones, D. J. Perry | M. J. Murphy | P. & O. Steam Navigation Co. |
| *Suffolk* | 30.1.58 | C. P. Robinson | M. Pennell, P. Robertson, P. Kean | N. Fancett | Federal Steam Navigation Co. |
| *Surrey* | 26.11.57 | H. J. D. Sladen | P. Ireland, N. Niblock, A. MacNeil | A. Titley | New Zealand Shipping Co., Ltd. |
| *Sussex* | 31.12.57 | N. A. Thomas | A. Watt, E. Cooper, J. Newsham, A. Seymour | D. Mason | New Zealand Shipping Co., Ltd. |
| *Swiftpool* | 19.3.58 | C. H. Churchill | J. Edmondson, H. M. Preece, C. Pinchbeck | A. Brown | Ropner Shipping Co., Ltd. |
| *Sydney Star* | 30.8.57 | R. White, D.S.C. | C. J. Denny, P. Stevens, N. Roberts, J. Reeve | T. Winney | Blue Star Line, Ltd. |
| *Sylvania* | | F. G. Watts, R.D., Lt.-Cdr. R.N.R. (Retd.) | R. P. Wakefield, R. Wadsworth, J. K. Cooper | A. H. Farman | Cunard Steamship Co., Ltd. |

| Name of Vessel | Last Return Received | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
|---|---|---|---|---|---|
| *Tagelus* | 20.11.57 | J. M. Davidson | D. D. Walker, G. Griffiths, J. A. Murray | D. M. Tarbet | Shell Tankers, Ltd. |
| *Tamele* | 17.10.57 | J. A. Cleator | R. Moody, H. Nettleton, D. Allan, N. Crossman | T. Ainsworth | Elder Dempster Lines, Ltd. |
| *Tana* | | L. B. Anderson | W. G. Morrison, A. S. Thompson | | Chr. Salvesen & Co. |
| *Tantallon Castle* | 16.1.58 | J. B. James | T. C. M. Ball, D. Mitton, W. Kirkbride | I. Barber | Union Castle Mail S.S. Co., Ltd |
| *Tarkwa* | 19.9.57 | R. W. Philip | D. Corner, I. Wilson | T. Ainsworth | Elder Dempster Lines, Ltd. |
| *Tasmania Star* | 24.1.58 | G. C. Goudie | P. G. Entwistle, B. Woods, D. N. Murray | C. V. James | Blue Star Line, Ltd. |
| *Tectus* | 19.12.57 | T. W. Green | C. T. Fellowes, T. D. McDermott, J. Screech | R. T. Rowse | Shell Tankers, Ltd. |
| *Tekoa* | 3.1.58 | A. C. Davies | O. B. Embleton, B. Smith, J. Forrest | E. Morrison | New Zealand Shipping Co., Ltd. |
| *Tenagodus* | 3.1.58 | T. W. A. Webster | G. Brown, V. Graham, D. E. Mitchell | —. Bramley | Shell Tankers, Ltd. |
| *Tetela* | 10.3.58 | F. T. Barber | D. F. Baker, P. A. Chubb, G. Spikins | F. Lawton | Elders & Fyffes, Ltd. |
| *Teviot* | 20.2.58 | J. L. Perkins | S. F. W. Phillips, J. P. L. Thornhill, T. D. Lilley | A. Cohen | Royal Mail Lines, Ltd. |
| *Thaumastus* | 1.1.58 | E. MacDonald | R. Evans, J. Wahlberg, R. Robinson | R. Hart | Shell Tankers, Ltd. |
| *Theliconus* | 17.6.57 | J. W. Barnsley | J. B. Morris, A. C. M. Clifford, R. S. Smith | A. G. Cope | Shell Tankers, Ltd. |
| *Thelma* | 13.1.58 | T. A. W. Fairweather | J. MacColl, G. McKelvie, D. Sweeney | L. J. Delany | Glen & Co., Ltd. |
| *Thule* | 10.5.55 | F. Holst | R. E. Dovik, G. Abrahamsen, R. Pettersen | E. Bergan | Hector Whaling, Ltd. |
| *Timaru Star* | 10.1.58 | W. Pitcher | D. McNeil, J. Calabrase, M. Plumley | W. Peddie | Blue Star Line, Ltd. |
| *Tinto* | 31.7.57 | H. Whitfield | T. Burge, G. Lawson, P. Ramsay | G. S. Dunn | Ellerman's Wilson Line, Ltd. |
| *Tongariro* | 25.10.57 | S. W. Lambrick | N. H. Parry, J. W. Cair, M. Carrel, J. L. Mills-Baker | P. Stephenson | New Zealand Shipping Co., Ltd. |
| *Torr Head* | 28.10.57 | W. Baird | R. A. Maxwell, J. C. Savage, R. Harris | D. Hodgson | Ulster S.S. Co., Ltd. |
| *Tottan* | | L. Jacobsen | J. A. Smith, B. G. Ellis (Meteorological Staff) | O. M. Rasmussen | Royal Society |
| *Tregenna* | 13.1.58 | W. F. Denyer | R. C. Powell, E. F. Boyd, G. Nielson | A. M. Cartney | Hain S.S. Co., Ltd. |
| *Trelevan* | 31.7.57 | D. A. Loud | P. H. Morgan, J. Cushion, A. M. Turner | P. A. Brown | Hain S.S. Co., Ltd. |
| *Trelyon* | 18.10.57 | W. T. Evans | J. O. Spence, W. Dodson, C. J. Double | V. D. Duggan | Hain S.S. Co., Ltd. |
| *Tremeadow* | | K. S. Hawken | C. J. Ducker, W. Bulmer, —. Hobson | F. B. Bowles | Hain S.S. Co., Ltd. |
| *Trevelyan* | | H. Gravell | K. R. Sadler, J. L. Hazell, P. Byrne | A. Corregan | Hain S.S. Co., Ltd. |
| *Treworlas* | 4.12.57 | B. W. George | J. K. H. Munday, R. N. Denby, T. Wyatt | H. Venis | Hain S.S. Co., Ltd. |
| *Tribesman* | 13.2.58 | W. S. Eustance | J. A. Billington | J. D. McCartney | T. & J. Harrison, Ltd. |
| *Tribulus* | | C. R. Barnsley | R. S. Oakes, L. W. Davies, R. Williams | J. Finlay | Shell Tankers, Ltd. |
| *Tweed* | 10.1.58 | —. Meldrum | R. Fairbairn, A. Acason, J. Diaper | | Royal Mail Lines, Ltd. |
| *Twickenham* | 12.8.57 | A. Ferguson | J. Newly, R. Crosby, D. Wells | W. Dewhirst | Watts, Watts & Co., Ltd. |
| *Tyrone* | 27.2.58 | N. Fraser | J. T. Duhig, J. K. Bryon, G. W. Johnston | L. A. E. Laval | Trinder, Anderson & Co., Ltd. |
| *Umtata* | 1.1.58 | F. E. J. O'Hea | J. H. Szablowski, M. P. R. Turner, N. J. Parker | J. Molloy | Cayzer, Irvine & Co., Ltd. |
| *Velletia* | 31.3.58 | J. E. Nettleship | G. L. Lowth, J. Russel, J. Ross, P. J. Wearing | T. J. Murray | Shell Tankers, Ltd. |
| *Volo* | 6.2.58 | A. D. Seath | P. Bishop, G. Forward, D. A. Ellerby | G. Bart | Ellerman's Wilson Line, Ltd. |
| *Volvula* | 26.2.58 | —. Bamberry | W. T. Rogerson, D. J. Boots, D. L. Sleith | J. F. Cosgrove | Shell Tankers, Ltd. |
| *Wairangi* | 26.11.57 | G. M. Robertson, D.S.C. | B. Hills, C. Beck, S. Carr, B. Wilcox | G. Adamson | Shaw Savill & Albion Co., Ltd. |
| *Waiwera* | 20.1.58 | T. H. Davies | E. A. Outen, H. P. M. Lawrence, A. H. Thompson, T. F. Williams | J. Downie | Shaw Savill & Albion Co., Ltd. |
| *Wendover* | 24.2.58 | J. D. Smith | W. Thomson, D. J. Vincent, R. H. Arnott | W. G. Martin | Watts, Watts & Co., Ltd. |
| *Westmeath* | 14.3.58 | E. J. Ridout | T. W. Day, J. McWilliams, W. Duncan | P. M. Keville | Trinder, Anderson & Co. Ltd. |
| *Winchester Castle* | 3.1.58 | G. W. B. Lloyd | G. H. Ryan, P. Kaye, T. Atkinson | E. H. Pitt | Union Castle Mail S.S. Co. |
| *Windsor* | 31.12.57 | F. W. Grist | J. Boyle, D. Dickson, J. Lang | B. Phelan | Watts, Watts & Co., Ltd. |
| *Woodford* | 18.3.57 | J. Cormack | L. Lang, D. P. Marshall, J. Timms, A. Ferguson | M. Moore | Watts, Watts & Co., Ltd. |
| *Woolwich* | 4.3.57 | J. Cormack | M. Jones, A. Brown, M. J. Court | A. True | Watts, Watts & Co., Ltd. |
| *Worcestershire* | 29.1.58 | F. C. Brooks | J. D. Routledge, A. McPherson, V. G. McColl | D. Alcock | Bibby Bros. & Co. |
| *Yoma* | 1.1.58 | T. F. Fields | A. F. Morrison, J. Wilkie, M. Buchanan | J. Brown | P. Henderson & Co., Ltd. |

# Supplementary Ships

| Name of Vessel | Last Return Received | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
|---|---|---|---|---|---|
| *Alert* | 17.9.57 | R. H. J. Wallis | R. M. Turnbull, D. M. Curror, G. McLagan, G. Alfrid | A. Prest | H.M. Postmaster-General |
| *Apollo* | 25.10.57 | G. V. Barnes | M. G. Mowatt, P. Howells, R. Claridge | | Bristol Steam Navigation Co., Ltd. |
| *Borodino* | 6.2.58 | A. T. Jardine | R. L. Cole, F. Barnes, S. Wilkinson | F. Smith | Ellerman's Wilson Line, Ltd. |
| *Cape Howe* | 27.11.57 | A. M. Fraser | P. Cameron, T. R. Baker, A. R. Kerr | D. D. Moore | Lyle Shipping Co. |
| *Cara* | 24.1.58 | A. McKay | J. P. Skinner, W. Taylor, A. Sage | J. McDonald | Glen & Co. |
| *Carlo* | | H. Whitfield, M.B.E. | R. S. Neesham, D. Brackenbury, P. Ramsay | F. Mitchalls | Ellerman's Wilson Line, Ltd. |
| *Circassia* | 24.1.58 | J. McG. Brown | R. R. Watt, C. MacMillan, A. Mangan | J. M. McDonald | Anchor Line, Ltd. |
| *Clan Lamont* | 5.11.57 | F. D. Bonney, M.B.E. | J. H. Powell, J. G. Lynch | D. W. Wilson | Clan Line Steamers, Ltd. |
| *Clan MacBrayne* | 20.3.58 | C. A. Thomas | D. I. McMinn, R. A. Simmons, D. K. Morris | C. H. Stokes | Clan Line Steamers, Ltd. |
| *Dartmoor* | 13.1.57 | F. Brandfield | D. Nicholas, I. Gault, E. D. Somes | M. McEvoy | Walter Runciman & Co., Ltd. |
| *Eastern City* | 1.3.57 | I. Williams | T. J. Williams, —. Judd, D. S. Sapp | K. Pearson | Sir William Reardon Smith & Sons, Ltd. |
| *Echo* | | E. Taylor | J. F. Tremlett, J. N. Thatcher, D. J. Young | | Bristol Steam Navigation Co., Ltd. |
| *Edward Wilshaw* | 28.10.57 | J. M. Rutherford | G. C. R. Proctor, P. A. D. Martin | M. J. Wade | Cable & Wireless, Ltd. |
| *Gardenia* | | J. H. Gray | J. M. Oliver, D. E. Rees, W. Frazer | J. R. Mace | Stag Line, Ltd. |
| *Glitra* | | M. Scott | D. Archibald, D. Corbett | | Chr. Salvesen & Co. |
| *Greenbatt* | 28.10.57 | R. Cook | I. Coulthard, W. Craig | I. Patrick | Newbigin & Co. |
| *Hesione* | 31.12.57 | L. W. Gibbins | M. B. Fowkes, S. M. Grant, A. Logan | W. B. Slone | Clan Line Steamers, Ltd. |
| *Hudson Deep* | 18.2.58 | J. Gibbons, D.S.C. | D. Lee, G. Cunningham, A. E. Ford | V. Smith | Hudson S.S. Co., Ltd. |
| *Hudson Firth* | 8.7.57 | A. Crosby | M. R. Uminski, M. A. Smith, G. Campbell | P. B. O'Shaughnessy | Hudson S.S. Co., Ltd. |
| *Malmo* | 13.12.57 | J. Botheroyd | L. Gibson, B. Scarborough, R. Philips | F. Johnson | Ellerman's Wilson Line, Ltd. |
| *Marie Louise Mackay* | 1.11.55 | C. F. Hunter | L. P. Denny, H. Goodbody, W. Nimmo, L. Cook, S. Bailey | E. Mathias | Commercial Cable Co. |
| *Marna* | 3.12.57 | J. A. McConachie | J. Carnie, A. D. Harkness | | Chr. Salvesen & Co. |
| *Martagon* | 25.3.58 | R. Paton | M. Choratewski, J. Lewers, B. Sanderson | | Kaye, Son & Co., Ltd. |
| *Menastone* | 9.4.56 | S. F. Sheasby | W. Thomas, A. Todd, P. Sunsmore | J. Devitt | Messrs. Stone and Rolfe, Ltd. |
| *Meta* | 31.12.57 | A. W. Macnab | R. S. Machachlan, R. G. Laurenson, J. Punton | D. Gough | Glen & Co., Ltd. |
| *Milo* | 7.2.57 | H. E. Lawson | P. J. Wright, B. Middleton | | Bristol Steam Navigation Co., Ltd. |
| *Mirror* | 31.12.57 | C. C. Muckleston, R.D., Lt.-Cdr. R.N.R. (Retd.) | H. M. B. Davies, E. J. Reilly, M. R. Bonds, D. S. M. Tosh, D. J. Edmans | C. F. Rolfe | Cable & Wireless, Ltd. |
| *Mulberry Hill* | 26.2.58 | J. Newton | G. T. Hall, E. Hansen, A. Lanporte | J. S. Brown | Counties Ship Management Co., Ltd. |
| *Nicania* | 24.2.58 | J. Morrison | B. Atkinson, W. E. Reed, J. F. Dagleas | B. L. Drake | Shell Tankers, Ltd. |
| *Northia* | 3.4.56 | A. Mackay | M. A. Cooper, I. G. C. Wildish, J. Dagleas | T. M. Sherriff | Shell Tankers, Ltd. |
| *Port Fairy* | 31.12.57 | G. K. Morris | J. D. Hitchmough, D. N. Haddon, —. Cave, D. Packman | E. Dickson | Port Line, Ltd. |
| *Rookwood* | 26.5.57 | J. Thompson | W. G. Dedwith, D. V. Duncanson, B. Taylor, H. Whiston | J. Kelleher | Wm. France, Fenwick & Co., Ltd. |
| *Sandpiper* | | W. G. James | B. Tarr, W. H. Conway, A. Harr | | General Steam Navigation Co. |
| *Shuna* | | J. Loose | K. Wilson, —. Ballantyne | —. Quin | Glen & Co., Ltd. |
| *Tarantia* | 12.9.57 | R. S. Paton | H. Cameron, G. Watson, W. Miller | A. McPherson | Anchor Line, Ltd. |
| *Trelissick* | 1.1.58 | G. A. McKay | C. D. Forster, A. V. Rowles | S. Stringer | Hain S.S. Co., Ltd. |
| *Trevince* | 12.11.56 | B. George | E. F. Boyd, D. J. Cornish, A. L. Warren | C. D. McCarthy | Hain S.S. Co., Ltd. |
| *Tronda* | 31.12.57 | S. Sutherland | W. Sinclair, A. McDonald, W. Anderson | S. Sutherland | Chr. Salvesen & Co. |
| *Truro* | 13.2.58 | J. Marrow | A. D. Clough, J. Wray | F. Petch | Ellerman's Wilson Line, Ltd. |
| *Tweedbank* | | —. Brant | G. A. Palmer, I. Orford, R. I. Loads | K. Darwen | The Bank Line, Ltd. |

## Supplementary Ships—Contd.

| Name of Vessel | Last Return Received | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
|---|---|---|---|---|---|
| *Tynemouth* .. .. | 29.10.57 | W. L. Pattison .. .. | F. Wright, T. Barras, C. Mott, J. Ayre .. .. | J. Duigan .. .. | Burnett S.S. Co. |
| *Uganda* .. .. | 1.1.58 | D. W. Speirs, G.M. .. .. | F. C. Welch, T. W. Barnett, P. W. Crump, C. J. Bee | —. Soulsby .. .. | British India Steam Nav. Co., Ltd. |
| *Umvoti* .. .. | | A. A. Atkinson .. .. | C. Lamaletie, R. Fullarton, D. Grant .. .. | C. Ritchie .. .. | Bullard King & Co., Ltd. |
| *Warwick Castle* .. | 31.12.57 | D. Sowden, R.D., Cdr. R.N.R. .. | —. Acutti, —. Burgess .. .. .. .. | —. Thomas .. .. | Union Castle Mail S.S. Co., Ltd. |
| *Winga* .. .. | 27.3.58 | R. J. McNinch .. .. | J. M. Bryan, R. Maclachlan .. .. .. .. | A. Corless .. .. | Glen & Co., Ltd. |

# Marid Ships

**The following is a list of ships voluntarily observing and reporting sea temperatures from coastal waters of Great Britain. Captains are requested to point out any errors or omissions in the list.**

| Name of Vessel | Captain | Owners/Managers |
|---|---|---|
| *Actuality* | D. O'Leary | F. T. Everard & Sons, Ltd. |
| **Aire* | J. Collier | Associated Humber Lines |
| *Amsterdam* | C. R. Baxter, D.S.C. | British Transport Commission |
| **Angelo* | O. R. Cudbartson | Ellerman's Wilson Line, Ltd. |
| *†Apollo* | G. V. Barnes | Bristol Steam Navigation Co., Ltd. |
| **Ariosto* | W. C. Gill | Ellerman's Wilson Line, Ltd. |
| **Atlantic Coast* | H. J. Cowan | Coast Lines, Ltd. |
| **Blyth* | J. N. Walker | Associated Humber Lines |
| *British Coast* | P. A. Johnson | Coast Lines, Ltd. |
| **Bury* | D. H. Aaron | Associated Humber Lines |
| **Bylands Abbey* | J. W. Westerdale | Associated Humber Lines |
| *Caledonian Coast* | F. Mara | Coast Lines, Ltd. |
| *Cambria* | R. A. H. Lord, R.D., Lt.-Cdr. R.N.R. (Retd.) | British Transport Commission |
| *Cato* | C. Knight | Bristol Steam Navigation Co., Ltd. |
| **Cicero* | E. Tyler | Ellerman's Wilson Line, Ltd. |
| *Claymore* | J. C. McKinnon | David MacBrayne |
| **Clupea* | J. Jappy | Fishery Board for Scotland |
| **Corfen* | A. Metcalf | Wm. Cory & Son, Ltd. |
| *Corfleet* | G. Jeffrey | Wm. Cory & Son, Ltd. |
| **Cormain* | J. T. Collin | Wm. Cory & Son, Ltd. |
| *Cormead* | E. Allen | Wm. Cory & Son, Ltd. |
| *Cormoat* | R. B. Armstrong | Wm. Cory & Son, Ltd. |
| **Cormull* | R. V. O'Connell | Wm. Cory & Son, Ltd. |
| *Corncrake* | W. S. Dunlop | Moss Hutchison Line, Ltd. |
| *Crane* | R. M. Evans | Moss Hutchison Line, Ltd. |
| **Don* | F. Drury | Associated Humber Lines |
| **Drake* | G. C. Longfield | General Steam Navigation Co., Ltd. |
| **Dryburg* | G. Simpson | George Gibson & Co., Ltd. |
| *Duke of Argyll* | W. N. Greenwood | British Transport Commission |
| *Duke of Lancaster* | V. Irwin, R.D., Cdr. R.N.R. (Retd.) | British Transport Commission |
| *Duke of Rothesay* | H. Thompson | British Transport Commission |
| **Edinburgh Merchant* | T. S. Robertson | London Scottish Line |
| *Empire Cymric* | R. Hockings | Atlantic Steam Navigation Co., Ltd. |
| *Empire Gaelic* | J. T. Morgan | Atlantic Steam Navigation Co., Ltd. |
| *Empire Nordic* | W. G. Page | Atlantic Steam Navigation Co., Ltd. |
| *Fountains Abbey* | F. W. Wooler | Associated Humber Lines |
| *Fulham X* | D. Battle | Central Electricity Authority |
| *Golden Dawn* | A. Adamson | A. Adamson, M.B.E. |
| **Gothland* | H. Anderson | Currie Line, Ltd. |
| *Great Western* | H. H. Coney | British Transport Commission |
| **Grebe* | W. Lockhart | General Steam Navigation Co., Ltd. |
| *Greyfriars* | D. Hunt | E. R. Newbigin, Ltd. |
| *Guernsey Coast* | F. C. Lucas | Coast Lines, Ltd. |
| **Hadrian Coast* | W. Wyness | Coast Lines, Ltd. |
| *Harrogate* | —. Gaton | Associated Humber Lines |
| **Hebble* | H. W. Crabtree | British Transport Commission |
| *Hibernia* | E. A. Horspool | British Transport Commission |
| **Hibernian Coast* | C. H. Mearns | Coast Lines, Ltd. |
| **Iberian Coast* | G. G. Coxford | Tyne Tees Shipping Co., Ltd. |
| **Innisfallen* | T. A. McVeigh | City of Cork Steam Packet Co. |
| *Isle of Guernsey* | H. G. Hequet | British Transport Commission |
| *Isle of Jersey* | F. Cantle | British Transport Commission |
| *Isle of Sark* | H. G. Hequet | British Transport Commission |
| *Jersey Coast* | H. G. Keilit | Coast Lines, Ltd. |
| **Kirkham Abbey* | W. H. Fox | Associated Humber Lines |
| *Lairds Crest* | J. M. Wood | Burns Laird Line, Ltd. |
| *Lairds Wood* | H. Davidson | Burns Laird Line, Ltd. |
| **Leinster* | P. Mullan | British & Irish Steam Packet Co. |
| *Loch Seaforth* | J. Smith | David MacBrayne, Ltd. |
| **London Merchant* | W. Fisher | London Scottish Lines, Ltd. |
| **Macclesfield* | W. Brown | British Transport Commission |
| *Maidstone* | E. H. Ashton | British Transport Commission |
| *Marine Craft Unit (R.A.F.) No.* 1102 | B. Rose | Royal Air Force |
| **Melrose* | J. Murray | Geo. Gibson & Co., Ltd. |
| *Melrose Abbey* | J. Blackburn | Associated Humber Lines |
| *†Meta* | A. D. McNab | Clydesdale Shipowners Co., Ltd. |
| *†Milo* | G. E. Knight | Bristol Steam Navigation Co., Ltd. |
| *Minna* | J. Macrae | Fishery Board for Scotland |
| **Munster* | T. MacFarlane | British & Irish Steam Packet Co. |
| **Netherlands Coast* | E. G. Fisher | Tyne Tees Shipping Co., Ltd. |
| *Ocean Coast* | G. H. Clarke | Coast Lines, Ltd. |
| *Orchy* | J. McGugan | Wm. Sloan & Co., Ltd. |
| **Pluto* | A. F. Dudgeon | Bristol Steam Navigation Co., Ltd. |
| *Princess Maud* | E. A. Bradshaw | British Transport Commission |
| *Ringdove* | E. C. Painter, D.S.C. | General Steam Navigation Co., Ltd. |
| **Rollo* | S. Stokes | Ellerman's Wilson Line, Ltd. |
| *Runa* | J. Gilfillan | Clydesdale Shipowners Co., Ltd. |
| *St. Helier* | R. P. Pitman | British Transport Commission |
| *St. Julien* | B. Newton | British Transport Commission |
| **St. Magnus* | L. Mainland | N. of Scotland & Ork. & Shet. S.N. Co., Ltd. |

## Marid Ships—*contd.*

| Name of Vessel | Captain | Owners/Managers |
|---|---|---|
| •*St. Ninian* | A. M. Dundas | N. of Scotland & Ork. & Shet. S.N. Co., Ltd. |
| †*Sandpiper* | W. G. James | General Steam Navigation Co., Ltd. |
| *Selby* | F. Drury | Associated Humber Lines |
| •*Silvio* | H. Whitfield | Ellerman's Wilson Line, Ltd. |
| *Slieve Bawn* | A. Robertson | British Transport Commission |
| *Slieve Bearnagh* | E. N. Ashton | British Transport Commission |
| *Slieve Bloom* | R. I. Griffiths | British Transport Commission |
| *Slieve League* | G. J. Butterworth | British Transport Commission |
| *Slieve More* | K. H. Ashton | British Railways (L.M. Region) |
| *Southern Coast* | D. Mercer | Coast Lines, Ltd. |
| •*Suffolk Coast* | T. Tulloch | Tyne Tees Shipping Co., Ltd. |
| *Teamo* | E. R. Corp | Ellerman's Wilson Line, Ltd. |
| *Vienna* | R. Good, O.B.E. | British Railways (Eastern Region) |
| •*Whitby Abbey* | H. M. Collier | Associated Humber Lines |
| *Yarmouth Trader* | R. A. Goodings | Great Yarmouth Shipping Co., Ltd. |

• These ships also send in non-instrumental weather messages when in the North Sea.
† Ships also on the supplementary list.

## Trawlers

The following is a list of trawler skippers who voluntarily observe and report those elements of the weather which do not entail the use of any meteorological instruments (irrespective of the vessels in which they sail)

| Skipper | Trawler Owners/Managers | Skipper | Trawler Owners/Managers |
|---|---|---|---|
| H. J. Aldiss, R.D., R.N.R. | Ministry of Agriculture & Fisheries | E. Johnson | Thomas Hamling & Co., Ltd. |
| W. Barrell | Northern Trawlers, Ltd. | J. A. Kersey | St. Andrew's Steam Fishing Co., Ltd. |
| S. Bensley | Northern Trawlers, Ltd. | | |
| R. Blyth | Northern Trawlers, Ltd. | W. Marsh | Hellyer Bros., Ltd. |
| T. Booth | Northern Trawlers, Ltd. | A. V. Meech | Northern Trawlers, Ltd. |
| M. Call | Northern Trawlers, Ltd. | J. Myers | Thomas Hamling & Co., Ltd. |
| J. T. Cod | Onward Steam Fishing Co., Ltd. | J. Nunn | Northern Trawlers, Ltd. |
| C. Coultas | Sir Thomas Robinson & Son, Ltd. | G. Phillips | Lord Line, Ltd. |
| L. Coultas | Onward Steam Fishing Co., Ltd. | F. Pitts | Hudson Bros. Trawlers, Ltd. |
| J. Crockwell | Northern Trawlers, Ltd. | D. Roberts | Derwent Trawlers, Ltd. |
| J. Dobson | Thomas Hamling & Co., Ltd. | N. Rogers | St. Christopher Steam Fishing Co., Ltd. |
| R. East | Lord Line, Ltd. | | |
| A. C. Ellerby | Northern Trawlers, Ltd. | R. Sackville-Bryant | Boyd Line, Ltd. |
| J. C. Evans | Crampin Steam Fishing Co., Ltd. | T. Sawyers | Thomas Hamling & Co., Ltd. |
| T. Fall | Atlas Steamship Co., Ltd. | H. J. Self | Northern Trawlers, Ltd. |
| W. Fletcher | Lord Line, Ltd. | S. Sparkes | Thomas Hamling, & Co., Ltd. |
| J. Gibson | Thomas Hamling & Co., Ltd. | J. W. Tomlinson | Lionel C. Tomlinson |
| C. Gill | Boyd Line, Ltd. | J. E. Tregunno | Northern Trawlers, Ltd. |
| J. Gower | Hudson Bros. Trawlers, Ltd. | G. Ward | Dominion Steam Fishing Co., Ltd, |
| F. Gray | Thomas Hamling & Co., Ltd. | B. C. Wharam | St. Andrew's Steam Fishing Co., Ltd. |
| J. Green | Northern Trawlers, Ltd. | | |
| A. E. Hall | St. Andrew's Steam Fishing Co., Ltd. | G. Whitcombe | Northern Trawlers, Ltd. |
| | | T. Whitcombe | Northern Trawlers, Ltd. |
| H. Hall | Northern Trawlers, Ltd. | A. Whittlelon | Derwent Trawlers, Ltd. |
| R. Hall | Hudson Bros. Trawlers, Ltd. | G. Whur | Charleson-Smith Trawlers, Ltd. |
| W. Hardie | Consolidated Fisheries, Ltd. | E. A. Woolridge | Lord Line, Ltd. |
| G. Honhold | Hellyer Bros., Ltd. | J. M. Wright | Loyal Steam Fishing Co., Ltd. |
| T. Howe | Thomas Hamling & Co., Ltd. | | |

## Light-vessels

The following light-vessels voluntarily observe, record and/or report from coastal waters of Great Britain.

| Name of Vessel | Masters |
|---|---|
| *Bar* | E. E. Abbott, N. S. Burns |
| *Dowsing* | W. M. Ling, T. J. Lewis |
| *East Goodwin* | G. A. Nixion |
| *Galloper* | E. G. Mullitt |
| *Humber* | H. V. Fuller, D. A. Bacon |
| *Newarp* | B. Hadden, R. Middleton |
| *Royal Sovereign* | L. P. Dawson, S. G. Sharman |
| *St. Gowan* | E. H. Rosser, S. G. Lloyd |
| *Seven Stones* | D. Appleby, J. H. Cooper |
| *Shambles* | A. C. Edward, C. N. Duff |
| *Shipwash* | R. Thomas, T. J. Quinn |
| *Skulmartin* | D. Hawkins, J. K. Carley |
| *Smith's Knoll* | B. E. Cunham, R. E. Say |

## Training Establishments

The following is a list of Training Establishments which submit logbooks, kept by the cadets under training, to the Marine Division.

| Establishment | Captain/Superintendent | Last Return Received |
|---|---|---|
| *Conway*, H.M.S. | E. Hewitt, R.D., Capt. R.N.R. | 24.11.57 |
| Pangbourne Nautical College | H. C. Skinner, O.B.E., Cdr. R.N. (Retd.) | 25.3.58 |
| Reardon Smith Nautical College | J. N. Rose, R.D., Lt.-Cdr. R.N.R. (Retd.) | 31.1.58 |
| Warsash, School of Navigation | G. W. Wakeford, M.B.E. | 14.8.57 |
| *Worcester*, H.M.S. | R. Gabbett-Mulhallen, Cdr. R.N. (Retd.) | 29.4.57 |

# BRITISH COMMONWEALTH

The following lists give the names of observing ships that co-operate with meteorological services of the British Commonwealth.

## AUSTRALIA (Information dated 9.4.57)

| Name of Vessel | Call Sign | Owners |
|---|---|---|
| Selected Ships: | | |
| *Aros* | SMPT | Australia West Pacific Line |
| *Asphalion* | GZPZ | A. Holt & Co. |
| *Bulolo* | VJPD | Burns, Philip & Co. |
| *Canara* | MAGZ | British India Steam Navigation Co. |
| *Charon* | GZJQ | A. Holt & Co. |
| *Chupra* | GDZV | British India Steam Navigation Co. |
| *Citos* | SEDN | Australia-West Pacific Line |
| *Delos* | SIGA | Australia-West Pacific Line |
| *Duntroon* | VLFB | Melbourne Steamship Co., Ltd. |
| *Gorgon* | MBKC | A. Holt & Co. |
| *Idomeneus* | GKYZ | A. Holt & Co. |
| *Koolinda* | VJFC | Western Australian State Steamships |
| *Koorawatha* | VLCW | McIlwraith & McEachern Ltd. |
| *Kooringa* | VLKR | McIlwraith & McEachern, Ltd. |
| *Malaita* | VJYY | Burns, Philip & Co. |
| *Malekula* | VLWB | Burns, Philip & Co. |
| *Milos* | SIVA | Australia-West Pacific Line |
| *Nellore* | GBLZ | Eastern & Australian Steamship Co., Ltd. |
| *Orestes* | GFPQ | A. Holt & Co. |
| *Port Melbourne* | GTFF | Port Line, Ltd. |
| *Romanic* | GSLS | Bolton Steam Shipping Co., Ltd. |
| *Triadic* | GDNM | British Phosphate Commissioners |
| *Trienza* | GJJZ | British Phosphate Commissioners |
| *Triona* | GDFZ | British Phosphate Commissioners |
| *Wanganella* | VJPQ | Huddart, Parker & Co., Ltd. |
| *Westralia* | VJNJ | Huddart, Parker & Co., Ltd. |
| Supplementary Ships: | | |
| *Daylesford* | VJQM | Western Australian State Steamships |
| *Dorrigo* | VMWB | Western Australian State Steamships |
| *Dulverton* | VJVJ | Western Australian State Steamships |
| *Kabbarli* | VLXV | Western Australian State Steamships |
| *Koojarra* | VMXK | Western Australian State Steamships |
| *Kybra* | VJFN | Western Australian State Steamships |

## BERMUDA (Information dated 1.2.56)

| Name of Vessel | Call Sign | Owners |
|---|---|---|
| *Ocean Monarch* | GJXD | Furness, Withy & Co., Ltd. |
| *Queen of Bermuda* | GZKF | Furness, Withy & Co., Ltd. |

## CANADA (Information dated 6.3.58)

| Name of Vessel | Call Sign | Owners |
|---|---|---|
| Selected Ships: | | |
| *Arosa Sun* | HPTT | Arosa Lines (Canada), Ltd. |
| *Baffin* | | Minister of Mines and Technical Surveys |
| *Bluenose* | VDND | Minister of Transport, Canadian Government |
| *Canadian Challenger* | VGSK | Canadian National (West Indies) Steamships, Ltd. |
| *Canadian Constructor* | VGBY | Canadian National (West Indies) Steamships, Ltd. |
| *Canadian Cruiser* | VGPZ | Canadian National (West Indies) Steamships, Ltd. |
| *Cyrus Field* | GKQC | Western Union Telegraph Company |
| *D'Iberville* | CGSM | Minister of Transport, Canadian Government |
| *Esso San Juan* | HOJV | Panama Transport Co., Panama, R.P. |
| *Fort Avalon* | MBMC | Furness Withy & Co. |
| *Fort Hearne* | VCGX | Hudson's Bay Co., Ltd. |
| *Imperial Edmonton* | VGSJ | Imperial Oil Shipping Co., Ltd. |
| *Imperial St. Lawrence* | HOOX | Caribbean Oil & Transport Co. |
| *Imperial Toronto* | VGSG | Imperial Oil Shipping Co., Ltd. |
| *Irvingbrook* | HPBM | Western Trading Corporation, Nassau, Bahamas |
| *Irving Glen* | | Highland Traders Inc., Panama, R.P. |
| *John W. MacKay* | GFXK | Commercial Cable Co. |
| *Lakemba* | VPKV | Pacific Shipowners, Suva, Fiji |
| *Lakonia* | GCDB | Donaldson Lines, Ltd. |
| *Lord Kelvin* | GDMM | Western Union Telegraph Co. |
| *Pinnacles* | VGGZ | Shell Canadian Tankers, Ltd. |
| *Rupertsland* | VDXX | Hudson's Bay Co., Ltd. |
| *Sungleam* | LJSQ | Lorents S. Lyngass, Tonsberg, Norway |
| *Sunjaru* | MSPD | Saguenay Terminals, Ltd. |
| *Suva* | VQWQ | Pacific Shipowners, Ltd. |
| *Thor I* | LLWZ | A.S. Thor Dahl, Sandefjord, Norway |
| *Thorscape* | LARD | A.S. Thor Dahl, Sandefjord, Norway |
| *Thorsgaard* | LALK | A.S. Thor Dahl, Sandefjord, Norway |
| *Waihemo* | ZMJO | Union Steamship Co. of New Zealand |
| *Waikawa* | ZMJI | Union Steamship Co. of New Zealand |
| *Wairuna* | ZMJT | Union Steamship Co. of New Zealand |
| *Waitomo* | ZMKO | Union Steamship Co. of New Zealand |
| Supplementary Ships. | | |
| *Anna Bakke* | LHNK | Knutsen Line |
| *Banksland* | VGTF | Hudson's Bay Co., Ltd. |
| *Bougainville* | LMSQ | Klaveness Line |
| *Bronxville* | LFFM | Klaveness Line |
| *Canadian Conqueror* | VCPV | Canadian National (West Indies) Steamships, Ltd. |
| *Canadian Highlander* | VCPP | Canadian National (West Indies) Steamships, Ltd. |
| *Canadian Leader* | VCQC | Canadian National (West Indies) Steamships, Ltd. |
| *Canadian Observer* | VCNW | Canadian National (West Indies) Steamships, Ltd. |
| *Canadian Victor* | VCNX | Canadian National (West Indies) Steamships, Ltd. |
| *City of Brooklyn* | GZKT | Ellerman Lines, Ltd. |
| *Elisabeth Bakke* | LJJX | Knutsen Line |
| *Ellen Bakke* | LDAA | Knutsen Line |
| *Fort Severn* | VDKN | Hudson's Bay Co., Ltd. |
| *Gjertrud Bakke* | LJZK | Knutsen Line |
| *Hindanger* | LMAB | Westal-Larsen, Bergen, Norway |
| *Indiana* | | Ameritalia S.P.A., Trieste |
| *Kristen Bakke* | LATI | Knutsen Line |
| *Paloma Hills* | VGGX | Shell Canadian Tankers, Ltd. |
| *Princess Helene* | VGKL | Canadian Pacific Steamships |
| *Rincon Hills* | VGGY | Shell Canadian Tankers, Ltd. |
| *Stugard* | LMIZ | Hjalmar Roed & Co., Tonsberg, Norway |
| *Sunadele* | HBFL | Zurich Shipping Co., Zurich, Switzerland |
| *Sunbeam* | LMCE | Samulsen Falsun, Norway |
| *Sunmoira* | LLXD | Dampskibsselkapet, Marna A/S, Oslo, Norway |
| *Sunnyville* | LNQZ | Klaveness Line |
| *Sunprincess* | | Princess Shipping Co., Monrovia, Liberia |
| *Sunrose* | LLLR | Lorents S. Lynglass, Tonsberg, Norway |
| *Ventura* | LAFS | Ditleve-Simonsen, Ltd. |
| *Vigan* | LAGQ | Ditleve-Simonsen, Ltd. |
| *William Carson* | VOLW | Minister of Transport, Canadian Government |

## PAKISTAN (Information dated 1.4.58)

| Name of Vessel | Call Sign | Owners |
|---|---|---|
| *Al-Hasan* | AQAN | Muhammadi S.S. Co., Ltd. |
| *Al-Husaini* | AQAH | Muhammadi S.S. Co., Ltd. |
| *Al-Sayyada* | AQAS | Muhammadi S.S. Co., Ltd. |
| *Anwarbaksh* | AQAM | United Oriental S.S. Co., Ltd. |
| *Kadarbaksh* | AQBK | United Oriental S.S. Co., Ltd. |
| *Maulabaksh* | AQBP | United Oriental S.S. Co., Ltd. |
| *Mustali* | AQBU | Gulf S.S. Co., Ltd. |
| *Ocean Endurance* | AQBW | Trans-Oceanic S.S. Co., Ltd. |
| *Pakistan Prosperity* | AQAZ | Karachi Steam Navigation Co., Ltd. |

# HONG KONG (Information dated 9.4.58)

| Name of Vessel | Call Sign | Captain | Observing Officers | Senior Radio Officer | Owner/Manager |
|---|---|---|---|---|---|
| *Anking* | MLLJ | G. T. M. Ramsay | T. A. C. Taylor, R. J. Shipp, J. D. Holden | Choi Pong Cheung | China Navigation Co., Ltd. |
| *Anshun* | GMFM | J. McKinlay | J. F. O'Connor, R. A. Elder, P. J. Mooney, P. N. Bell | Leung Shu Fun | China Navigation Co., Ltd. |
| *Belinda* | VRPY | J. D. Chapman | A. MacDonald, P. H. Lin, L. S. Cheong | K. F. Chan | Shun Cheong Steam Navigation Co., Ltd. |
| *Changsha* | MLLK | D. C. Sim | S. H. Damp, R. J. Carson, H. A. Murray, R. D. Poulton | Lai Mou Wah | China Navigation Co., Ltd. |
| *Changte* | VPFK | E. B. Beeham | R. A. Smith, T. I. Robertson, M. J. Drummond | R. McNamara | China Navigation Co., Ltd. |
| *Chekiang* | ZEKN | B. McLennan | K. A. Page, R. A. Taylor, R. Kennett | Ho Po Lam | China Navigation Co., Ltd. |
| *Chengtu* | MTWN | V. R. Woolfe | J. A. McDonald, P. J. Stock, K. Y. Tso | Chan Man Kit | China Navigation Co., Ltd. |
| *Choy Sang* | VRKQ | J. H. Thomas | J. E. Hanbidge, P. D. Seddon, Wong Pui Choi | D. H. Stone | Indo-China Steam Navigation Co., Ltd. |
| *Chungking* | GTCN | W. Pollock | J. W. G. Wilby, B. Ginley, W. S. Sutcliffe-Hey | Ng Pui Chuen | China Navigation Co., Ltd. |
| *Eastern Argosy* | ZCUG | H. J. Cairns | T. H. Nichols, J. Chisholm, J. D. Witachi | T. McMinn | Indo-China Steam Navigation Co., Ltd. |
| *Eastern Glory* | VRLL | W. T. Rochester | J. G. Perrin, J. D. McNeil, J. A. C. Hunter | A. P. MacIsaac | Indo-China Steam Navigation Co., Ltd. |
| *Eastern Maid* | ZCSH | G. Kinley | W. F. Povey, D. Wilson, K. K. Chen | D. C. Matheson | Indo-China Steam Navigation Co., Ltd. |
| *Eastern Muse* | ZCSF | F. H. Main | P. J. Sullivan, L. Kirk, G. W. S. Ison | J. C. Middleton | Indo-China Steam Navigation Co., Ltd. |
| *Eastern Queen* | VRML | J. F. G. Fotheringham | P. G. Harkness, M. H. Major, F. G. Christie | R. O. Smith | Indo-China Steam Navigation Co., Ltd. |
| *Eastern Saga* | VRKK | M. I. Groundwater | A. B. Weller, D. McCrudden, N. J. Wilson | R. H. Bullers | Indo-China Steam Navigation Co., Ltd. |
| *Eastern Star* | VRPF | W. J. Bartlett | C. Preston, J. A. Cant, R. C. Hoggard | A. Smith | Indo-China Steam Navigation Co., Ltd. |
| *Elsbeth* | VRJL | H. Worton | D. Goodwin, S. Luk | K. P. Wong | Shun Cheong Steam Navigation Co., Ltd. |
| *Fengning* | GGQY | A. Watson | G. Burgum, B. I. Williams | Tsang Pui Leung | China Navigation Co., Ltd. |
| *Fengtien* | GDVX | G. P. Cope | K. D. Johnson, L. A. McGowan, K. Y. Shin | Shiu Ping Fan | China Navigation Co., Ltd. |
| *Foochow* | GZPD | G. Baxter | A. Bartley, M. T. Anderson, S. M. Ho | Tang Yuen | China Navigation Co., Ltd. |
| *Fukien* | GBQZ | J. Hunter | A. H. McAuley ,W. Cooper, K. W. Lee | Kwan Hok Wai | China Navigation Co., Ltd. |
| *Funing* | GGSB | L. King | M. D. O'Keeffe, C. M. Knight, R. D. Harvey | Chin Fook On | China Navigation Co., Ltd. |
| *Golden Kappa* | VRPB | V. H. Froebel | I. A. Scott, A. G. Agnew, Tommy Gan | Wong Sik-Yan | World Wide Steamship Co., Ltd. |
| *Hai Hing* | LKFD | J. Eide | A. Sjoberg, R. Andresen, C. M. Bjorndal | Yuek Chung | China Siam Line |
| *Hai Lee* | LIVC | T. Thorkildsen | A. Lerstang, A. Gronvik, Jorgen Waage | Chan Wuei Iu | China Siam Line |
| *Hai Meng* | LNXK | E. T. Sorensen | A. Overland, O. Olsen, T. B. Naess | Chan Kam Tsun | China Siam Line |
| *Halldor* | JWLR | Henry Jakobsen | J. Bogwald, H. Hofsnes, A. Svinterud | Bjorn Tangerud | China Siam Line |
| *Hang Sang* | VRKR | M. J. K. Crichton | P. Bush, G. G. Mackay, S. C. Tseng | R. Prosser | Indo-China Steam Navigation Co., Ltd. |
| *Hanyang* | GTTY | C. N. Stewart | M. D. Burbidge, J. Y. Dymock, C. Yueh | Yue Shiu Ming | China Navigation Co., Ltd. |
| *Heinrich Jessen* | OXRE | J. N. Holst | U. Bahnsen, W. Kronenbitter, E. Andersen | Tse Kam Sack | Jebsen & Co. |
| *Helios* | LACF | Nills Soelberg | O. Johannesen, R. Rosendahl, J. Assebo | Ip Yuk Fai | China Siam Line |
| *Henrik* | LAPM | H. Kystvaag | H. Yndestad, S. Hostad, A. Solbaak | Chiu Tze Kong | China Siam Line |
| *Hermelin* | LKIZ | O. Osterberg | B. Maaren, P. Finne, R. Johansen | Lai Kwong Yin | China Siam Line |
| *Hermod* | LKTL | O. J. Apold | H. Andersen, R. Farstad, N. Klokk | P. Poon | China Siam Line |
| *Hervar* | LAPL | H. Andersen | K. Jacobsen, O. Henriksen | Fung Wing Chee | China Siam Line |
| *Hew Sang* | VRKV | G. Parish | M. J. Pope, D. Wiles, T. R. Hammond | S. I. V. Yarrow | Indo-China Steam Navigation Co., Ltd. |
| *Hin Sang* | VRKL | W. E. Reeve | J. H. Gould, H. F. Schack, Hsu Chien Szu | T. J. Shea | Indo-China Steam Navigation Co., Ltd. |
| *Hoi Houw* | LNXE | B. Maeland | M. Aarland, K. Hemnes, H. Pedersen | H. Olsen | Karsten Larssen & Co. (Hong Kong), Ltd. |
| *Hoi Wong* | LNQL | J. Bjerkenes | O. Utseth, O. Espeseth, L. Hovland | J. Larsen | Karsten Larssen & Co. (Hong Kong), Ltd |
| *Hoi Ying* | LLUJ | O. Oftedal | A. Vespestad, R. Lien, K. Andersen | L. Andersson | Karsten Larssen & Co. (Hong Kong), Ltd. |
| *Hong Kong Trader* | ZCKN | E. G. Anderson | I. Wylie, Tien Yung Kwong, Leung Kui Yuen | Wen Wing Hoo | Great Southern Steamship Co., Ltd. |
| *Hop Sang* | VPBP | T. C. W. Marr | W. D. Skidmore, B. G. Cox, G. A. Angus | D. Taylor | Indo-China Steam Navigation Co., Ltd. |
| *Ho Sang* | VRGJ | R. K. Learoyd | E. E. Ewbank, M. Tonner, T. Y. Yuen | Luk U. Cheong | Indo-China Steam Navigation Co., Ltd. |
| *Hunan* | GPQL | J. R. Keddie | B. G. D. Ward, P. A. Blaney, Y. S. Loh | Lo Kin Chek | China Navigation Co., Ltd. |
| *Hupeh* | GWRN | A. V. Harrison | R. E. Brooks, P. H. A. Montgomery, R. C. W. Yu | Tsang Kau | China Navigation Co., Ltd. |

| | | | | | | |
|---|---|---|---|---|---|---|
| *Jacob Jebsen* | OYJO | R. A. D. Nielsen | H. Fallesen, F. Kopp, F. Brodersen | L. Yung | Jebsen & Co. |
| *Lao* | SKRT | S. A. Ostling | R. A. Ericksson, P. O. Granqvist, T. H. P Gustafsson | P. E. G. Wengelin | Everett Steamship Corporation |
| *Lok Sang* | VRJZ | R. G. G. Stanton | W. G. White, G. A. Milward, P. Ferrar | H. Burgoyne | Indo-China Steam Navigation Co., Ltd. |
| *Michael Jebsen* | OULD | G. R. Hansen | G. Andersen, M. Hansen, C. Petersen | E. Belard | Jebsen & Co. |
| *Ocean Trader* | ZCKH | S. J. Harvey | F. M. Sullivan, C. S. Barboza, Fung Bui | Hung San | Great Southern Steamship Co., Ltd. |
| *Pakhoi* | GTTK | W. E. Hargrave | D. Green, N. C. Pearson, C. T. Lu | Lam Bun | China Navigation Co., Ltd. |
| *Poyang* | GTTF | D. W. R. Gash | P. W. Campbell, H. Sih, T. F. Hung | Tong Sik Iu | China Navigation Co., Ltd. |
| *Produce* | LLPG | L. Hetland | J. Jensen, F. Jorgensen, A. Hialtalin | Lok Kow Wei | Karsten Larssen & Co. (Hong Kong), Ltd. |
| *Sangola* | GCLB | F. Mear | G. A. Hankin, J. R. Young, G. E. Garvey | D. Dowie | British India Steam Navigation Co., Ltd. |
| *Shansi* | GTQP | J. F. Follett | J. B. H. J. Aldiss, R. F. D. Pook, K. M. Nairn | J. P. Asome | China Navigation Co., Ltd. |
| *Sinkiang* | GNQW | W. J. Bunney | M. W. Lewis, M. E. Barrett, K. H. Nettleship, H. Penning | Wai Pun Un | China Navigation Co., Ltd. |
| *Soochow* | GTWS | F. Hindle | D. A. Hutchinson, T. H. Connell, M. J. Jordan | Leung Kan | China Navigation Co., Ltd. |
| *Star Alcyone* | HPUU | D. S. Hulten | S. A. Bengtsson, P. E. A. Kingberg, E. Nielsen | L. A. Larson | Everett Steamship Corporation |
| *Star Betelgeuse* | HOFI | S. Sundstedt | S. G. Andersson, R. Krastins, L. O. Lunden | P. G. Nilsson | Everett Steamship Corporation |
| *Szechuen* | GKWJ | E. H. Histed | A. Atkin, C. F. Chan, C. J. Wong | Chan Kong | China Navigation Co., Ltd. |
| *Tai Chung Shan* | VRGX | D. O. Conway | T. J. McDonough, M. T. Chan, Y. L. Ho | K. Y. Poon | Shun Cheong Steam Navigation Co., Ltd. |
| *Taiping* | VPFQ | N. L. Hall | J. A. Doyle, B. P. White, W. R. Womersley | R. P. Emery | China Navigation Co., Ltd. |
| *Tai Poo An* | ZCSG | A. H. Bathurst | W. L. Shi, H. K. Fung, C. H. Fung | G. Y. Lum | Shun Cheong Steam Navigation Co., Ltd. |
| *Tai Poo Sek* | ZCKP | E. L. M. Merrett | K. S. Ho, Y. L. Liang | F. Y. Kan | Shun Cheong Steam Navigation Co., Ltd. |
| *Taiyuan* | MLLF | E. Bruce | J. M. K. Kelly, R. V. Crowhurst, G. Chell, A. T. Tugwell | Wu P. Chi Siang | China Navigation Co., Ltd. |
| *Tak Sang* | VRKN | L. C. Cox | I. D. Patterson, D. I. Hooper, G. A. Roddam | W. I. Briggs | Indo-China Steam Navigation Co., Ltd. |
| *Yochow* | GWQB | C. A. N. Baker | J. R. Kidd, Y. Lin, W. Lee | Wat Kwan | China Navigation Co., Ltd. |
| *Yunnan* | GWXP | A. J. Keddie | M. R. M. Seale, N. B. Manning, C. Y. Zia | Cheung Shau Wai | China Navigation Co., Ltd. |



## MALAYA (Information dated August 1957)

| Name of Vessel | Call Sign | Captain | Observing Officers | Senior Radio Officers | Owners and Managers |
|---|---|---|---|---|---|
| *Bentong* | ZBNF | R. G. Ogden | F. H. Roe | K. P. Quinn | Straits Steamship Co., Ltd. |
| *Benveg* | GMWB | R. D. Robb | J. M. MacLeod | S. G. Thompson | Ben Line Steamers, Ltd. |
| *Bidor* | ZBBZ | H. D. Nock | E. V. Bloomfield | B. G. Major | Straits Steamship Co., Ltd. |
| *Darvel* | VPQC | A. R. Pearson | R. G. Mallet | P. V. Abrahams | Straits Steamship Co., Ltd. |
| *Islander* | VSPS | F. C. Gray | A. H. Spears | P. L. Long | Christmas Island Phosphate Commissioners; Boustead & Co., Ltd. |
| *Kajang* | VPQD | A. B. Clerk | J. W. Cook, H. R. Watson | F. J. Menezes | Straits Steamship Co., Ltd. |
| *Kah Poh* | ZBBJ | J. S. Robertson | J. S. Robertson | | Ho Chiang Shipping Co., Ltd. |
| *Katong* | ZBNR | R. C. Liddle | A. M. Hatton | J. W. F. Evans | Straits Steamship Co., Ltd. |
| *Kimanis* | VSND | A. W. Richardson | H. M. Stanfield, H. P. Davies | D. A. E. Goodland, Koh Chwee Seng | Straits Steamship Co., Ltd. |
| *Kinabalu* | MGDC | A. B. Durrant | P. N. Hicks, B. W. Reeves | K. M. Pillai | Straits Steamship Co., Ltd. |
| *Larut* | VPKO | G. H. Stewart | V. W. Pinnington | Mohamed Salleh bin Abdullah | Straits Steamship Co., Ltd. |
| *Marudu* | VPQB | N. R. Murray | P. C. Smith | C. E. George, Kuo Vhuen Shuan | Straits Steamship Co., Ltd. |
| *Matang* | VSPB | J. M. Harkness | J. H. G. Tapscott, Noor bin Ismail | A. E. Engineer | Straits Steamship Co., Ltd. |
| *Perak* | VSPJ | H. W. Wilkinson | B. S. Roberts | R. M. Fernandez | Straits Steamship Co., Ltd. |
| *Perlis* | VSRA | B. S. Sprenger | E. M. Evans | N. Tham | Straits Steamship Co., Ltd. |
| *Recorder* | GSFS | L. Cook | N. Morganti, J. S. Brown, R. D. Wright | G. O'Brien | Cable & Wireless, Ltd. |
| *Salong* | VSYZ | A. D. Watterson | A. D. Watterson | Chan Tham Shun | Straits Steamship Co., Ltd. |

# INDIA (Information dated 22.4.58)

| Name of Vessel | Call Sign | Owners |
|---|---|---|
| Selected Ships: | | |
| *Bahadur* | MAVH | Asiatic Steam Navigation Co., Ltd. |
| *Dara* | GDTT | British India Steam Navigation Co., Ltd. |
| *Daressa* | GFSM | British India Steam Navigation Co., Ltd. |
| *Dumra* | GMLM | British India Steam Navigation Co., Ltd. |
| *Dwarka* | GCKS | British India Steam Navigation Co., Ltd. |
| *Havildar* | GLVK | Asiatic Steam Navigation Co., Ltd. |
| *Indian Exporter* | VWVW | India Steamship Co., Ltd. |
| *Indian Merchant* | VWVR | India Steamship Co., Ltd. |
| *Indian Pioneer* | VWVS | India Steamship Co., Ltd. |
| *Indian Reliance* | VWCJ | India Steamship Co., Ltd. |
| *Indian Trader* | VWVT | India Steamship Co., Ltd. |
| *Islami* | VWJC | The Mogul Line, Ltd. |
| *Jalaganga* | VWJG | Scindia Steam Navigation Co., Ltd. |
| *Jalaketu* | VWWC | Scindia Steam Navigation Co., Ltd. |
| *Jalakrishna* | VWJM | Scindia Steam Navigation Co., Ltd. |
| *Jalamanjari* | VWWY | Scindia Steam Navigation Co., Ltd. |
| *Jalaprakash* | VWYD | Scindia Steam Navigation Co., Ltd. |
| *Jalayamuna* | VWJJ | Scindia Steam Navigation Co., Ltd. |
| *Jalazad* | VWDF | Scindia Steam Navigation Co., Ltd. |
| *Jaljawahar* | VWDD | Scindia Steam Navigation Co., Ltd. |
| *Kampala* | GCKX | British India Steam Navigation Co., Ltd. |
| *Karanja* | MACS | British India Steam Navigation Co., Ltd. |
| *Mahadevi* | GCRN | Asiatic Steam Navigation Co., Ltd. |
| *Mohammedi* | GCBS | The Mogul Line, Ltd. |
| *Mozaffari* | MACV | The Mogul Line, Ltd. |
| *Nadir* | GCDV | Asiatic Steam Navigation Co., Ltd. |
| *Nicobar* | VWJL | The Eastern Shipping Corporation |
| *Nurani* | MAPS | Asiatic Steam Navigation Co., Ltd. |
| *Rajula* | GMSN | British India Steam Navigation Co., Ltd. |
| *Risaldar* | GLVL | Asiatic Steam Navigation Co., Ltd. |
| *Santhia* | GFSN | British India Steam Navigation Co., Ltd. |
| *Shahjehan* | GPVX | Asiatic Steam Navigation Co., Ltd. |
| *Sirdhana* | GCLD | British India Steam Navigation Co., Ltd. |
| *State of Bombay* | VWWP | The Eastern Shipping Corporation |
| *State of Kutch* | VWBY | The Eastern Shipping Corporation |
| *State of Madras* | VWWN | The Eastern Shipping Corporation |
| *State of Saurashtra* | VWXY | The Eastern Shipping Corporation |
| *State of Travancore-Cochin* | VWBX | Eastern Shipping Corporation |
| *Subadar* | MADK | Asiatic Steam Navigation Co., Ltd. |
| *Umaria* | GMNS | British India Steam Navigation Co., Ltd. |
| Supplementary Ships: | | |
| *Amra* | GNNX | British India Steam Navigation Co., Ltd. |
| *Bharatbhushan* | VWCY | The Bharat Line, Ltd. |
| *Bharatmitra* | VWYX | The Bharat Line, Ltd. |
| *Bharatraja* | VWXL | The Bharat Line, Ltd. |
| *Bharatrani* | VWXM | The Bharat Line, Ltd. |
| *Bharatratna* | VWZX | The Bharat Line, Ltd. |
| *Bharatveer* | VWZY | The Bharat Line, Ltd. |
| *Bharatvijaya* | VWZK | The Bharat Line, Ltd. |
| *Indian Commerce* | VWZW | India Steamship Co., Ltd. |
| *Indian Renown* | VWCF | India Steamship Co., Ltd. |
| *Indian Resolve* | VWDN | India Steamship Co., Ltd. |
| *Indian Resource* | VWDK | India Steamship Co., Ltd. |
| *Itaura* | GMWW | British India Steam Navigation Co., Ltd. |
| *Jag Ganga* | VWYV | Great Eastern Shipping Co., Ltd. |
| *Jag Rani* | VWZF | Great Eastern Shipping Co., Ltd. |
| *Jag Tara* | LKJR | Great Eastern Shipping Co., Ltd. |
| *Jag Vijay* | VWWT | Great Eastern Shipping Co., Ltd. |
| *Jaladhan* | VWFQ | Scindia Steam Navigation Co., Ltd. |
| *Jaladharma* | VWFX | Scindia Steam Navigation Co., Ltd. |
| *Jalakendra* | VWWB | Scindia Steam Navigation Co., Ltd. |
| *Jalamayur* | VWWX | Scindia Steam Navigation Co., Ltd. |
| *Jalamohan* | VWCX | Scindia Steam Navigation Co., Ltd. |
| *Jalapadma* | VWYN | Scindia Steam Navigation Co., Ltd. |
| *Jalaprabha* | VWXS | Scindia Steam Navigation Co., Ltd. |
| *Jalaputra* | VWBN | Scindia Steam Navigation Co., Ltd. |
| *Jalarajendra* | VWYP | Scindia Steam Navigation Co., Ltd. |
| *Jalausha* | VWWV | Scindia Steam Navigation Co., Ltd. |
| *Jalavihar* | VWBQ | Scindia Steam Navigation Co., Ltd. |
| *Jalavijaya* | VWBR | Scindia Steam Navigation Co., Ltd. |
| *Jalavishnu* | VWBS | Scindia Steam Navigation Co., Ltd. |
| *Jalvallabh* | VWYM | Scindia Steam Navigation Co., Ltd. |
| *Malika* | GCSK | Asiatic Steam Navigation Co., Ltd. |
| *Rizwani* | VWBF | The Mogul Line, Ltd. |
| *Saudi* | GVKL | The Mogul Line, Ltd. |
| *State of Andhra* | VWBD | Eastern Shipping Corporation |
| *State of West Bengal* | VWXW | The Eastern Shipping Corporation |

## NEW ZEALAND (Information dated 17.2.58)

| Name of Vessel | Call Sign | Owners |
|---|---|---|
| Selected Ships: | | |
| *Kaimai* | ZMAB | Union Steam Ship Company of New Zealand, Ltd. |
| *Kaimanawa* | ZMGZ | Union Steam Ship Company of New Zealand, Ltd. |
| *Kaimiro* | ZMEC | Union Steam Ship Company of New Zealand, Ltd. |
| *Kaitoa* | ZMGC | Union Steam Ship Company of New Zealand, Ltd. |
| *Kaitoke* | ZMTZ | Union Steam Ship Company of New Zealand, Ltd. |
| *Kaponga* | ZMVE | Union Steam Ship Company of New Zealand, Ltd. |
| *Karitane* | ZMJX | Union Steam Ship Company of New Zealand, Ltd. |
| *Kauri* | ZMCV | Union Steam Ship Company of New Zealand, Ltd. |
| *Kawaroa* | ZMBX | Union Steam Ship Company of New Zealand, Ltd. |
| *Kawatiri* | ZMKX | Union Steam Ship Company of New Zealand, Ltd. |
| *Kawerau* | ZMFY | Union Steam Ship Company of New Zealand, Ltd. |
| *Komata* | ZMCX | Union Steam Ship Company of New Zealand, Ltd. |
| *Kopua* | ZMLZ | Union Steam Ship Company of New Zealand, Ltd. |
| *Koranui* | ZMBG | Union Steam Ship Company of New Zealand, Ltd. |
| *Koromiko* | ZMRT | Union Steam Ship Company of New Zealand, Ltd. |
| *Kowhai* | ZMQU | Union Steam Ship Company of New Zealand, Ltd. |
| *Kurow* | ZMFJ | Union Steam Ship Company of New Zealand, Ltd. |
| *Kurutai* | ZMQH | Union Steam Ship Company of New Zealand, Ltd. |
| *Matua* | ZMBN | Union Steam Ship Company of New Zealand, Ltd. |
| *Maui Pomare* | ZMMG | New Zealand Government |
| *Monowai* | ZMCD | Union Steam Ship Company of New Zealand, Ltd. |
| *Navua* | ZMCZ | Union Steam Ship Company of New Zealand, Ltd. |
| *Port Montreal* | GRKJ | Port Line, Ltd. |
| *Port Quebec* | GWGQ | Port Line, Ltd. |
| *Port Saint John* | GBCZ | Port Line, Ltd. |
| *Tofua* | ZLMI | Union Steam Ship Company of New Zealand, Ltd. |
| *Waimate* | ZMDV | Union Steam Ship Company of New Zealand, Ltd. |
| *Waimea* | ZMRU | Union Steam Ship Company of New Zealand, Ltd. |
| *Waipori* | ZMFL | Union Steam Ship Company of New Zealand, Ltd. |
| *Wairata* | ZMBZ | Union Steam Ship Company of New Zealand, Ltd. |
| *Wairimu* | ZMVR | Union Steam Ship Company of New Zealand, Ltd. |
| *Waitemata* | ZMQW | Union Steam Ship Company of New Zealand, Ltd. |
| Supplementary Ships: | | |
| *Coromel* | ZMLV | Jurie Shipping Co., Ltd. |
| *Kaiapoi* | ZMVD | Union Steam Ship Company of New Zealand, Ltd. |
| *Kairanga* | ZMCY | Union Steam Ship Company of New Zealand, Ltd. |
| *Kaitangata* | ZMTJ | Union Steam Ship Company of New Zealand, Ltd. |
| *Kaitawa* | ZMVC | Union Steam Ship Company of New Zealand, Ltd. |
| *Kaituna* | ZMHR | Union Steam Ship Company of New Zealand, Ltd. |
| *Konui* | ZMVB | Union Steam Ship Company of New Zealand, Ltd. |
| *Korowai* | ZMKD | Union Steam Ship Company of New Zealand, Ltd. |
| *Piri* | ZMGM | Imperial Chemical Industries, Ltd. |
| *Port Waikato* | ZMJN | Holm & Company, Ltd. |
| *Viti* | VQWS | Tasman Steam Ship Company of New Zealand, Ltd. |
| *Waiana* | ZMDQ | Union Steam Ship Company of New Zealand, Ltd. |
| *Waitaki* | ZMLR | Union Steam Ship Company of New Zealand, Ltd. |

## SOUTH AFRICA (Information dated 13.5.58)

| Name of Vessel | Call Sign | Owners/Commanding Officer |
|---|---|---|
| *Africana II* | ZSVK | Division of Fisheries, Cape Town |
| *F. T. Bates* | ZSWW | South African Railways and Harbours, Cape Town |
| *Constantia* | ZSRF | South African Marine Corporation, Cape Town |
| *Frances Repetto* | ZSNB | Tristan Development Co. Cape Town |
| *Godetia* | ZSQW | Irvin & Johnson, Cape Town |
| *Groote Schuur* | ZTJM | Irvin & Johnson, Cape Town |
| *Herero Coast* | MQZK | Thesens Steamship Co., Cape Town |
| *Morgenster* | ZSSJ | South African Marine Corporation, Cape Town |
| *South African Merchant* | ZTFT | South African Marine Corporation, Cape Town |
| *South African Trader* | ZTMX | South African Marine Corporation, Cape Town |
| *Tristania* | ZSCW | Tristan Development Co., Cape Town |
| *Vergelegen* | ZSSN | South African Marine Corporation, Cape Town |
| South African Nautical College, "General Botha" | | Captain G. V. Legassick, D.S.C., R.D., Capt. R.N.R. |
| Naval Gymnasium, Saldanha Bay | | Inst.-Commander S. C. Biermann, B.A. |

## WEST INDIES (Information dated 14.12.57)

| Name of Vessel | Call Sign | Owners |
|---|---|---|
| *Electra* | MRYX | Cable & Wireless, Ltd. |

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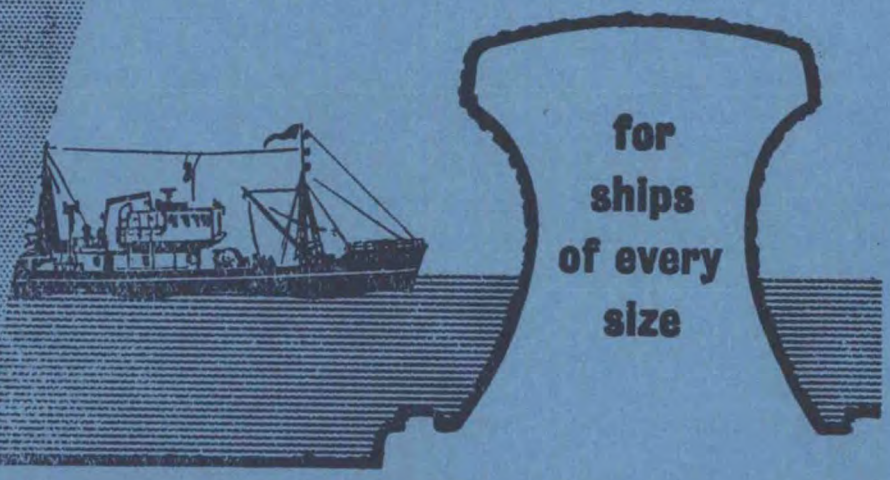

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# Meteorological Office (Marine Division) Atlases

The following are published by the Marine Division of the Meteorological Office and may be purchased from the bookshops of Her Majesty's Stationery Office at any of the addresses on the title page. Copies are available for reference by shipmasters and shipowners in the offices of Port Meteorological Officers.

## Meteorological Atlases

**Monthly Meteorological Charts of the Atlantic Ocean.** M.O.483, 1948. (60°S–70°N, 80°W–40°E) *Reprinting*

**Monthly Meteorological Charts of the Western Pacific.** M.O.484, 1956. (60°S–60°N, 100°E–155°W) (16¾″ × 23¾″) 105*s.* (post 2*s.* 9*d.*)

**Monthly Meteorological Charts of the Eastern Pacific.** M.O.518, 1956. (60°S–60°N, 160°W–60°W) (17½″ × 24½″) 147*s.* (post 3*s.* 3*d.*)

**Monthly Meteorological Charts of the Indian Ocean.** M.O.519, 1952. (50°S–30°N, 20°W–120°W) (16½″ × 22½″) *Reprinting*

The above four atlases contain monthly charts of wind, barometric pressure, air and sea temperature, and all meteorological elements including some typical tracks of tropical revolving storms.

**Monthly Sea Surface Temperatures and Surface Current Circulation of the Japan Sea and Adjacent Waters.** M.O.M.447, 1944. (20°N–47°N, 110°E–150°E) (20″ × 17″) 7*s.* 6*d.* (post 9*d.*)

**Monthly Sea Surface Temperatures of Australian and New Zealand Waters.** M.O. 516, 1949. (50°S–10°S, 100°E–180°) (19¾″ × 12¼″) 10*s.* (post 7*d.*)

**Monthly Sea Surface Temperature of the North Atlantic.** M.O.527, 1949. (30°N–68°N, 80°W–15°E) (19¾″ × 12¼″) 10*s.* (post 7*d.*)

**Monthly Meteorological Charts and Sea Surface Current Chart of the Greenland and Barents Seas.** M.O.575. (60°N–80°N, 30°W–120°E) *In the press*

This atlas contains a generalised surface current chart for the area and monthly charts of wind, barometric pressure, air and sea temperature, and all meteorological elements.

## Current Atlases

**Currents of the Indian Ocean.** M.O.392, 1939. (50°S–30°N, 20°E–140°E) (30″ × 20″) 10*s.* (post 7*d.*)

**South Pacific Ocean Currents.** M.O.435, 1938. (60°S–0°, 140°E–70°W) (22″ × 34″) 10*s.* (post 1*s.* 1*d.*)

The above two atlases contain quarterly " current arrow " and " current rose " charts.

**Quarterly Surface Current Charts of the Atlantic Ocean.** M.O.466, 1957. (60°S–70°N, 80°W–20°E) (22½″ × 18″) 32*s.* 6*d.* (post 1*s.* 6*d.*)

**Quarterly Surface Current Charts of the Western North Pacific Ocean with monthly chartlets of the China Seas.** M.O.485, 1949. (0°–60°N, 98°E–160°W) (21″ × 16″) 25*s.* (post 11*d.*)

The above two atlases contain current rose charts, predominant current charts, and vector mean current charts.

## Ice Atlases

**Monthly Ice Charts of the Arctic Seas.** M.O.M.390a, 1944. (60°N–80°N, 80°W–110°E) (12″ × 7″) 3*s.* 6*d.* (post 5*d.*)

Polar ice, mean limits of sea ice, extreme limits of sea ice, extreme limits of bergs.

**Monthly Ice Charts of Western North Atlantic.** M.O.478, 1944. (37°N–53°N, 72°W–35°W) (12″ × 7½″) 4*s.* (post 7*d.*)

Mean limits of pack, extreme limits of pack, mean limits of bergs, extreme limits of bergs.

## Her Majesty's Stationery Office

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